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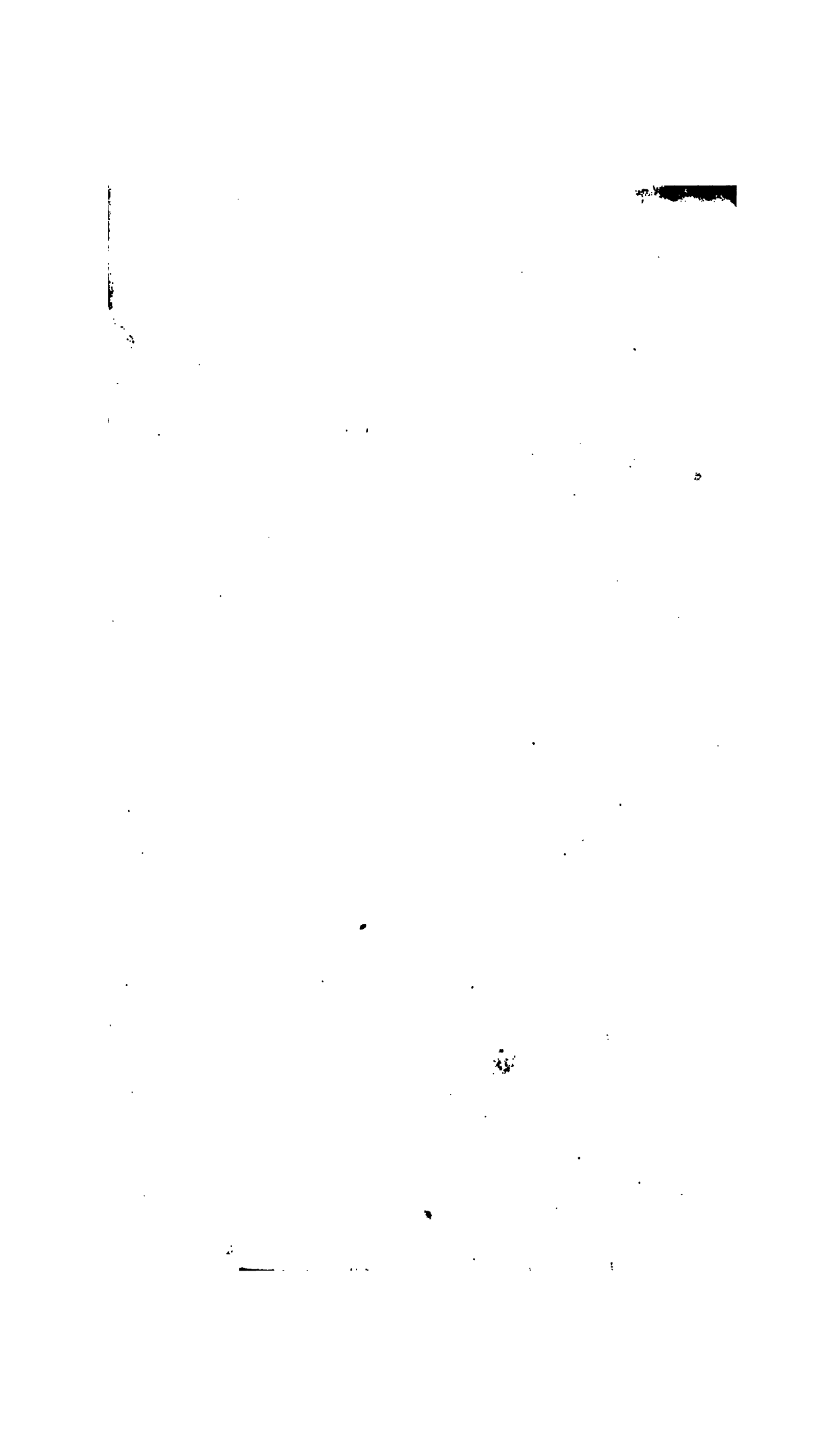
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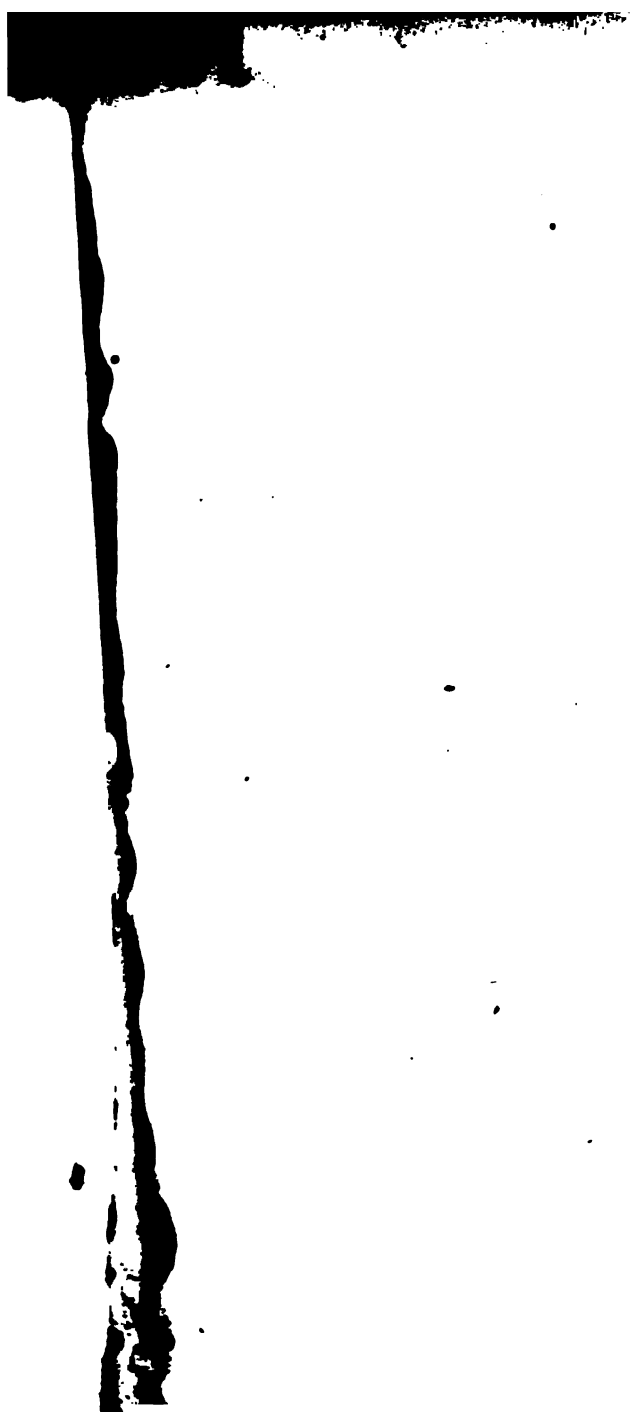
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Edinburgh Medical and Surgical Journal.
Edinburgh New Philosophical Journal.
Edinburgh Monthly Journal.
Glasgow Medical Journal.
Indian Annals of Medical Science.
Journal of Psychological Medicine.
The Lancet.
London Medical Examiner.
Medical Circular.
Medical Times and Gazette.
Microscopical Journal.
Pharmaceutical Journal.
Statistical Journal.

AMERICAN.

American Journal of the Medical Sciences.
Canada Medical Journal.
Montreal Monthly Journal.
New York Journal of Medicine.
North-Western Medical Journal.
Philadelphia Medical Examiner.

FRENCH.

Annales de Chimie et de Physique.
" *d'Hygiène Publique.*
" *Medico-Psychologique.*
" *d'Oculistique.*
" *des Sciences Naturelles.*
Archives Générales de Médecine.
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Comptes Rendus.
Gazette des Hôpitaux.
Gazette Hebdomadaire de Médecine et Chirurgie.
Gazette Médicale de Paris.
Journal de Pharmacie et de Chimie.
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Archiv für Physiolog, und Patholog. Ch. und Microskopie.
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THE
HALF-YEARLY ABSTRACT
OF THE
MEDICAL SCIENCES:



BEING

A PRACTICAL AND ANALYTICAL DIGEST OF THE CONTENTS OF THE PRINCIPAL BRITISH AND CONTINENTAL MEDICAL WORKS PUBLISHED IN THE PRECEDING SIX MONTHS.

TOGETHER WITH

A SERIES OF CRITICAL REPORTS ON THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES DURING THE SAME PERIOD.

EDITED BY

W. H. RANKING, M.D., CANTAB.,

PHYSICIAN TO THE NORFOLK AND NORWICH HOSPITAL,

AND

C. B. RADCLIFFE, M.D., LOND., L.R.C.P.,

ASSISTANT PHYSICIAN TO, AND LECTURER ON MATERIA MEDICA AT, THE WESTMINSTER HOSPITAL.

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ABSTRACT OF THE MEDICAL SCIENCES,

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PART I.

PRACTICAL MEDICINE, PATHOLOGY, AND THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

(A) HYGIENE.

ART. 1.—*On the disinfecting properties of Charcoal especially in "Respirators."* By
Dr. JOHN STENHOUSE, F.R.S., Lecture on Chemistry in St. Bartholomew's Hos-
pital.

(*The Times*, Nov. 22, 1854.)

THIS subject was brought before the Royal Medico-Chirurgical Society on Nov. 28th, and specimens of the respirators were exhibited, but no detailed account of the meeting has appeared as yet, and we therefore borrow the subjoined particulars from the "*Times*," where they appeared in a letter to the editor. Dr. Stenhouse writes:

"Charcoal not only absorbs effluvia and gaseous bodies, but, especially when in contact with atmospheric air, rapidly oxidizes and destroys many of the easily alterable ones, by resolving them into the simplest combinations they are capable of forming, which are chiefly water and carbonic acid.

"It is on this oxidizing property of charcoal as well as on its absorbent power that its efficacy as a deodorizing and disinfecting agent chiefly depends.

"Effluvia and miasmata are usually regarded as highly organized, nitrogenous, easily alterable bodies. When these are absorbed by charcoal, they come in contact with highly condensed oxygen gas, which exists within the pores of all charcoal which has been exposed to the air, even for a few minutes; in this way they are oxidized and destroyed. My attention has been specially directed for nearly a twelvemonth to the deodorizing and disinfecting properties of charcoal, and I have made an immense number of experiments on this subject.

"On the 22d of February last I brought the subject before the Society of Arts, and on that occasion exhibited a specimen of a charcoal respirator, and the mode of employing it. I likewise dwelt at some length on the utility of charcoal powder as a means of preventing the escape of noxious effluvia from churchyards, and from dead bodies on board ship and in other situations.

"On the 9th of June last I also, in a letter to the Society of Arts, proposed to employ charcoal ventilators, consisting of a thin layer of charcoal enclosed between two sheets of wire gauze, to purify the foul air which is apt to accumulate in water-closets, in the close wards of hospitals, and in the impure atmospheres of many of the back courts and mews-lanes of large cities, all the impurities being absorbed and retained by the charcoal, while a current of pure air alone is admitted into the neighboring apartments.

"In this way pure air is obtained from exceedingly impure sources. Such an arrangement as this, carried out on a pretty large scale, would be especially

useful to persons necessitated to live in pestiferous districts within the tropics, where the miasmata of ague, yellow fever, and other diseases are prevalent.

"The proper amount of air required by houses in such situations might be admitted through sheets of wire gauze or coarse canvas, containing a thin layer of coarse charcoal powder.

"Under such circumstances also pillows stuffed with powdered charcoal, and bed-coverlets having the same material quilted into them, could not fail to prove highly beneficial.

"A tolerably thick charcoal ventilator, such as I have just described, could be very advantageously applied to the gully-holes of our common sewers, and to the sinks in private dwellings, the foul water in both cases being carried into the drain by means of tolerably wide syphon pipes, retaining always about a couple of inches of water.

"Such an arrangement would effectually prevent the escape of any effluvia, would be easy of construction, and not likely to get soon out of order.

"The charcoal respirators to which I have already referred, and to which I should wish to draw especial attention, are of three kinds.

"The first form of the respirator is constructed for the mouth alone, and does not differ in appearance from an ordinary respirator, but is only half its weight, and about one-fifth of its price.

"The air is made to pass through a quarter of an inch of coarsely powdered charcoal, retained in its place by two sheets of silvered wire gauze covered over with thin woollen cloth, by which means its temperature is greatly increased. This charcoal respirator possesses several advantages over the respirators ordinarily in use:

"1st. Where the breath is at all fetid, which is usually the case in diseases of the chest, under many forms of dyspepsia, &c., the disagreeable effluvia absorbed by the charcoal, so that comparatively pure air alone is inspired. This I think, may occasionally exert a beneficial influence on diseases of the throat and lungs.

"2d. The charcoal respirator for the mouth alone will certainly prove highly useful in poisonous atmospheres, where miasmata abound, if the simple precaution is only observed of inspiring the air by the mouth and expiring it by the nostrils.

"The second form of respirator is ori-nasal—that is, embracing both mouth and the nose. It is only very slightly larger than the one already described, and does not cover the nose as the ordinary ori-nasal respirator does merely touches its lower extremity, to which it is adapted by means of a plate of flexible metal covered with soft leather. When this respirator is worn air enters the lungs without first passing through the charcoal, and any effluvia or miasmata contained in the atmosphere are absorbed and oxidized by the charcoal. This form of the respirator, therefore, is peculiarly adapted for protecting the wearer against fevers and other infectious diseases.

"The third form of the respirator is also ori-nasal, but is much larger, and therefore more cumbersome than the preceding variety. It is intended chiefly for use in chemical works, common sewers, &c., to protect the workmen from noxious effects of the deleterious gases, to which they are frequently exposed.

"I am aware that some persons, who admit the deodorizing properties of charcoal, deny that it acts as a disinfectant. I would direct the attention of persons to the following statement of facts: About a year ago the body of a full-grown cat and two rats were placed in open pans, and covered by two of powdered charcoal. The pans have stood during all that time in my laboratory, and though it is generally very warm, not the slightest smell has been perceptible, nor have any injurious effects been experienced by any of our ten persons by whom the laboratory is daily frequented.

"Now, had the bodies of these animals been left to putrefy under such circumstances, not only would the stench emitted have been intolerable, but some of the persons would certainly have been struck down by very malignant disorders. Within the last few months, charcoal powder has been most successively employed both at St. Mary's and St. Bartholemew's to arrest the progress of gangrene and other putrid sores. The cha

not require to be put immediately in contact with the sores, but is placed above the dressings, not unfrequently quilted loosely into a little cotton wool. In many cases, patients who were rapidly sinking have been restored to health.

"In the instance of hospital gangrene, we have to deal not only with effluvia, but also with real miasmata: for, as is well known, the poisonous gases emitted by gangrenous sores, not only affect the individual with whom the mischief has originated, but readily infect the perfectly healthy wounds of any individuals who may happen to be in its vicinity. So that in this way gangrene has been known to spread not only through one ward, but through several wards of the same hospital.

"Within the last few weeks the dissecting room at St. Bartholomew's Hospital has been perfectly deodorized by means of a few trays filled with a thin layer of freshly heated wood charcoal. A similar arrangement will, in all probability, be likewise soon applied to the wards of St. Bartholomew's, and every other well-conducted hospital.

"From these and other considerations, therefore, I feel perfectly confident that charcoal will prove by far the cheapest and best disinfectant.

"Unlike many other disinfectants, it evolves no disagreeable vapors, and if heated in close vessels, will always act, however long it has been in use, quite as effectively as at first.

"If our soldiers and sailors, therefore, when placed in unhealthy situations, were furnished with charcoal respirators, such as the second form above described, and if the floors of the tents, and the lower decks of ships were covered by a thin layer of freshly burnt wood charcoal, I think we could have little in future to apprehend from the ravages of cholera, yellow fever, and similar diseases, by which our forces have of late been decimated. If found more convenient, the charcoal powder might be covered with coarse canvas, without its disinfectant properties being materially impaired.

"The efficiency of the charcoal may be greatly increased by making it red-hot before using it. This can easily be done by heating it in an iron saucepan covered by an iron lid.

"When the charcoal is to be applied to inflammable substances, such as wooden floors, &c., of course it must be allowed to cool in close vessels before being used."

ART. 2.—*The baneful effects of extreme Cold.* By ———.

(*Medical Times and Gazette*, March, 3, 1855.)

The late frost, which has been more continued and severe than any which has occurred in England since the year 1814, and as severe and prolonged as this—indeed there was only a difference of 2° in the mean temperature, and of two days in the duration of these two remarkable frosts—furnishes a striking illustration of the baneful effects of increased cold, as may be seen in the subjoined quotation: "In the six weeks of severe frost, the deaths of 9408 persons have been registered. These deaths exceed the average by 1968; which appear under various diseases, and were the indirect results of the low temperature. The temperature of the six weeks was 28.4° on an average, and the deaths were nearly 100 weekly to every degree of depression below the freezing point of water. But the cold affected persons very differently, according to their age; for, in the five weeks that ended on Feb. 17th, at the first age of manhood (20 to 40), the cold did not destroy 2 in 10,000; at the age of 60 to 80 it was fatal to 38 in 10,000. If the average deaths at each of the five ages are subtracted from the deaths in the five weeks of cold weather, the numbers that are left represent the deaths by cold are 367 children and youths under 20; 159 young men and women of 20–40; 290 middle-aged persons of 40–60; 561 of 60–80; and 173 of 80 and upwards. Upon dividing these numbers by the persons living of the corresponding ages, we find that the mortality by cold in the 100,000, was at the rate of 35 under the age of 20, and 18, 64, 382, and 1749 at the four subsequent ages. The above numbers show that the power of cold on life varies according to definite laws; thus the mortality by cold is (35) twice as great under the age of 20, as the mortality (18) at 20–40; but, after that turning

point, the power of resisting cold, decreases every year, and men of 90, and men of 30, have suffered from the cold that we have experienced in the proportion of 100 to 1 (or of 1749 to 17.5). The general result is, that the danger after 30 of dying of cold, is doubled every nine years of age; for out of the same numbers living, to 1 death by cold at the age of 30, there are 2 at 39; 4 at the age of 48; 8 at the age of 57; 16 at the age of 66; 32 at the age of 75; and 64 at the age of 84. This series at least expresses very nearly the relative mortality by cold at the respective ages, during five weeks among two and a half millions of people."

ART. 3.—*The value of Instinct in the choice of Diet.*

By MR. THOMAS HUNT.

(*Association Medical Journal*, April 13, 1855.)

In a paper of much interest, which was read before the Medical Society of London, Mr. Hunt begins by referring to the signification in which the term instinct has been used; and then proceeds to express his opinion that it is no more true to allege that man has no instinct, than to deny that the lower animals possess a certain amount of reason. In man, instinct is first exhibited by the propensity of every new-born infant to suck and swallow—a propensity prior to experience, and independent of instruction. As age advances, the tendency to suck is gradually supplanted by a tendency to bite and masticate. Instinct, indeed, presides over the whole physical life of man, regulating his diet, and suggesting how he may best preserve his existence. After some remarks on regimen, including clothing, bathing, air, bodily and mental exercise and recreation, sleep, and all essentials to health, inclusive of diet and medicine, the author proceeds to offer some observations on diet. He observes that, in the question of prescribing a proper diet, instinct is beforehand with us, both with regard to the quantity and the quality of the food; and the variations between different people, with regard to dietetic points, are adduced as showing that the instinct of the individual is a far better aid in this matter than science, which has hitherto been able to shed but a very feeble light on this intricate subject. The author believes that many cases of dyspepsia actually originate in, or at least are aggravated by, a too rigid adherence to artificial rules of diet, a too restricted use of the good things which nature has provided, and a too strict avoidance of fruits, acids, sweets, fresh vegetables, vinous liquors, &c. We know something of the analysis of organic products; but of the process of their synthesis we are quite ignorant; and it seems presumptuous in us to dictate to the economy of digestion what materials are best suited to it. The natural sensations of the patient are far safer guides, both in health and in disease. In early fever, the appetites of man are far different from those in health; as fever advances and takes on new types, the longings of the patient vary; and sometimes articles supposed to be improper and indigestible (such as pickled walnuts, etc.), are desired, and, if the patient can only get them, he often dates his recovery from the indulgence of this apparently capricious taste. Many most distressing cases of dyspepsia may be relieved by allowing the patients every kind of food which their appetites may suggest. A variety of food is generally preferred, and is most salutary. The author relates several instances in which he had known disease of the digestive organs to be cured by the free indulgence in articles which are generally denounced as improper. There are exceptions to the rule that the instinct is the best guide. In some cases, the sensations of the palate and the stomach are disordered; as in the chlorotic female or the habitual drunkard; and sometimes we meet with cases in which persons are fond of certain substances, which, however, always "make them ill." Modern cookery, also, by setting before us a succession of spiced and savory food, also renders the appetite morbid, and causes exceptions to the rule that instinct dictates the quality of food.

(B) ACUTE DISEASE.

ART. 4.—*On the diagnosis of Typhus and Typhoid Fever.* By (1) Dr. PARKES, Physician to University College Hospital; (2) Professor FORGET, of Strasburg; and (3) Dr. RITCHIE, Physician to the Royal Infirmary at Glasgow.

1. (*Medical Times and Gazette*, Nov. 24, 1854.)

2. (*Gaz. Méd. de Paris*, Nov. 25, 1854.)

3. (*Glasgow Med. Journal*, Oct. 1854.)

It appears to be still necessary to insist occasionally upon the non-identity of typhoid and typhus fever; and we therefore transcribe the following remarks:—

1. Dr. Parkes speaks as follows in a clinical lecture:—

"You are brought to see this young woman, we will say for the first time: the specific rose-spots are gone; she is laboring to all intents and purposes under severe bronchitic and chest symptoms (a chemist, or practitioner with a druggist's shop, has prescribed, and given cough mixtures, perhaps, without seeing her); you find her respiration 30 in a minute, cough incessant, with some expectoration; nervous symptoms also well marked; vertigo complained of, torpor, the eyes closed; she is delirious at night; she has also diarrhœa, pain over the abdomen, pulse quick, tongue furrowed and somewhat coated. Suppose, I say, you were called to such a patient, and moreover she is unable to give any account of the previous illness, how are you to make the diagnosis? There are only two ways—one the positive method, the other the method as it is called by 'exclusion.' The first is obvious enough, and will of course be more valuable to the practised eye of the experienced physician, who seizes the nature of the case at the first glance by a sort of intuitive knowledge of what typhoid really is. Now the method of diagnosis by exclusion—the plan of logic-writers, *per viam exclusionis*, in this and other diseases, is one, though not without disadvantages, one yet of no mean importance. The first question you resolve in your mind will be—Is she or he, as the case may be, laboring under any of the idiopathic fevers? any of the exanthemata? No. Is it typhus? You make the same answer, as the eruption in ty-phus is as different from ty-phoid as scarlatina from measles. The eruption is absent in patients under 22 or 24 (this patient's age is about this). Is it relapsing fever, so common some years, as 1828–29? No. You ask yourself, then, is it typhoid? Yes. Nervous symptoms are marked, chest symptoms and diarrhœa also; the latter loose, granular, yellow, so peculiar to typhoid. You have soreness of the right iliac fossa; but then you say we have no rose-spots, and then you remember in at least 20 per cent. these rose-spots are not found. You must weigh and balance all these circumstances in your mind."

2. Dr. Forget has written several elaborate articles in the "*Gazette Médicale de Paris*" to furnish clinical proof of the non-identity of typhus and typhoid fevers.

In these articles he does not deny that typhoid fever may arise very commonly from infection; but he believes, from an experience of twenty years, that it may also proceed from a variety of causes quite foreign to it,—such as moral affections, irregularities of diet, different morbid affections of both solids and liquids. Thus, follicular inflammation may come on from local causes, idiopathic, attacking primarily the digestive canal. Typhus never appears unless under some unfavorable conditions of the atmosphere, and then it first attacks a district occupied by persons closely aggregated, and in want of proper nourishment.

By the external general aspect, severe typhoid and typhus fevers resemble one another; but, upon close inspection, certain points of difference will be observed. In follicular enteritis, the typhoid state is not constant, and is usually secondary. In typhus, the stupor and the prostration exist from the invasion of the attack, indicating a general cause acting primarily as a powerful poison.

In typhoid fever, the gastro-intestinal symptoms are more constant and more primitive, for they exist sometimes alone; and it is excessively rare to meet with cases of follicular enteritis which do not offer from the commencement the sandy, dotted, and rosy appearance of the tongue; the rumbling (*gargouillement*)

and pain in the right iliac fossa, the diarrhoea or the constipation, &c. Other symptoms may dominate over these, but they do not absorb them completely; while in typhus, especially at the commencement, the tongue is very often humid, smooth, and white; the abdomen is exempt from tympanitis and pain, and defecation is not sensibly altered. It is, nevertheless, true, that, in many instances, gastro-intestinal symptoms perfectly simulate those of follicular enteritis. Both typhus and typhoid fevers may be violently febrile or completely apyretic; either of them may present pectoral symptoms. As regards the lenticular rosy spots, represented as proper to typhoid fever, it is proved that they may not be produced in typhus. The author admits, however, that they constitute perhaps the best differential symptom. Typhoid fever is generally more slow and gradual in its progress. In simple, non-complicated cases, this uniform evolution is in exact relation to the development of the intestinal lesions. In typhus it is different; the disease acquires at the outset its greatest amount of intensity; then it oscillates, and varies from better to worse suddenly and unexpectedly. The nervous system has been acutely impressed by the morbid poison, and the ulterior accidents depend upon the variable localizations which happen to be produced. The duration of the diseases presents well-marked points of difference. While typhoid fever passes through its stages gradually, and with a quasi-fatal regularity, typhus becomes suddenly milder or more severe, and, under most unfavorable-looking aspects, may run on to cure with remarkable rapidity.

As regards treatment, it need scarcely be said, that no specific remedy has been found for the arrest of typhoid fever; the treatment must depend upon the features of each particular case; bleedings and purgatives, chlorine and mercurials, musk and bark, have respectively their proper application. But the author attaches especial importance to the management of the ulcerated digestive tube, and he forbids the administration of such stimulants as would act violently, or of any strong medicine calculated to excite irritation. In typhus fever this precept does not apply, the intestinal lesion being either absent or accidental. Whether the practitioner has to deal with cerebral, pectoral, or abdominal typhus, he need not fear, by any plan of treatment he can adopt, that he will be aggravating the intestinal ulcerations.

The same careful and scientific practitioners who, bearing in mind the ulcerated or gangrenous state of Peyer's patches of glands in typhoid fever, cease to expect to find any system of treatment by which that disease may be cut short do not despair of finding some agent sufficiently powerful to overcome the poison which in typhus fever is the cause of its characteristic train of symptoms. Nevertheless, we do not here possess any specific; but we may remove the patient from the infected district with advantage, and place him in pure air.

3. Dr. Ritchie's remarks are the conclusions to one of a set of clinical lectures on typhus and continued fever, which is published in the "Glasgow Medical Journal." He says:

"In conclusion, I would submit that, in the long course of inquiry now over, reaching from before Hippocrates to the present day, there is continuing evidence of the existence of two separate and essential, or primitive forms of fever, possessing many features of resemblance, and yet more of difference one with the other, and which, ever and anon, gave occasion to discussion among medical men on their nature and relations. The one fever, typhus, being distinguished by independence of situation, season, or temperature, arising spontaneously from human effluvia, as in crowded camps, but possessed of eminently contagious properties, and being often imported from distant infected localities; having a measles-like efflorescence on the skin as early as the fourth day, profound and diversified affection of the sensorium, great prostration of the vital powers, a disposition to putrescence requiring cordial food, wine, and other stimulants for its treatment. In favorable cases, taking place on the fourteenth day, followed by a crisis; but death often happening on the twelfth day, the necroscopies being chiefly negative, or only such as are occasioned by fluxion of blood, and by softening of the solids.

"The other fever, again, or our enteric, being of indigenous or

damp and cold seasons and countries as a simple sporadic fever, but, under special climatic and hygienic conditions, developing malignant epidemic, and also contagious qualities. Its prominent symptoms manifesting themselves much in the abdomen and thorax, the cutaneous eruption papular in form, inconstant, comparatively scanty, and appearing only about the eighth day; the disposition to crisis feeble, and seldom occurring before the twenty-first or twenty-eighth day, and the tendency to local complications so strong, that recovery often did not commence before the eightieth day. When death was the result, it was usually from inflammation, and sometimes perforation of the bowels, and the appearances on dissection were distinctive of inflammatory degeneration of the mucous membrane, the follicles, and other glands of the intestines. A moderately antiphlogistic, a soothing, cooling, and expectant treatment, such as one or two bleedings, a mild diet, fomentations to the belly, and abstinence from wine, spirits, or any kind of fermented liquor or stimulating food, was that which was suited to the disease."

ART. 5.—*On the internal use of Chloroform in Fever.* By Dr. GORDON, Physician to the Hardwicke Fever Hospital.

(*Dublin Hospital Gazette*, 1855.)

Dr. Gordon resorts to the use of chloroform in fever to subdue nervous irritation, and to procure sleep. He remarks :

"To the different means which have been made use of for this purpose, I would now add the internal administration of chloroform. I have used it with the happiest results when all other means had failed, and I can speak with confidence of its certain and speedy action. The following case affords a good example of its effects, and the mode of its administration."

Patrick Dempsey, æt. 25, was sent from Santry to the Hardwicke Hospital, on the 8th of December; he had been eleven days ill of fever; his body was covered with dark-colored maculæ; his pulse was 110, and very weak, his speech muttering and indistinct; he has subsultus in both upper and lower extremities. His head was shaved, he was ordered the bark mixture of the hospital, and half a pint of wine. Late in the evening he began to rave violently, and could not be induced to remain in bed; he was ordered large doses of hyoscyamus, and the back of his head was blistered; he was so violent as to require the use of a strait waistcoat all night.

December 9.—Has not slept since admission. Pulse 132; very weak. He continues constantly muttering and raving. Tongue dry and brown; eyes slightly suffused; head not very hot; respiration short, frequent, and irregular. He still requires the strait waistcoat to keep him in bed. He was now ordered 25 minims of chloroform in a draught, to be repeated in an hour. After the second draught his agitation and restlessness ceased, and the waistcoat was removed. He dozed a little through the day, but only for a few minutes at a time. Towards night he again became restless and delirious; the same quantity of chloroform was again administered, and repeated in an hour, when he fell into a sound sleep, which continued for nine hours. He awoke perfectly sensible; the subsultus had ceased, and his pulse had fallen to 100. He continued to improve, and in a few days was convalescent.

"In this, and other similar cases, chloroform acted by producing anæsthesia of the sensory nerves, and exerting a paralyzing influence on the muscular fibre; and this it appears to effect without depressing or deranging the nervous force, as is the case with sedatives in general, while it is altogether free from the objection of causing depression of the action of the heart, as is the case with some special sedatives. My colleague, Dr. Corrigan, has just treated a somewhat similar case by the internal administration of chloroform. I had an opportunity of daily witnessing the progress of the case; and, by his permission, I here append it."

Denis Behan, æt. 20, a porter from High Street, was admitted in the Hardwicke Hospital, January 4, 1854, the fifth day of his illness.

On the 6th day he was thickly covered with bright maculæ. His tongue was loaded, but moist; his pulse 112; respiration 22; no abnormal sound in the

lungs; no tenderness of abdomen. He is reported not to have slept for two nights. His eyes are red and injected, and his head hot. His head was shaved and cold lotion applied.

7th day.—Pulse 116; respiration 28; slept but little.

8th day.—Pulse 120; very feeble; respiration 32. Ordered bark and wine.

9th day.—Pulse 126; very feeble; respiration 32; head hot; constantly raving, and getting out of bed; no sleep; subsultus of hands; tongue dry; great difficulty of utterance. Vesicatorium nuchæ; eight ounces of wine.

10th day.—Pulse 130; weak, raving continually; difficult to restrain; requiring the straight waistcoat; constant talking; no sleep; tongue brown and dry in the centre; thirsty; eyes very congested; pupils dilated. Chloroform was now administered by inhalation, without any other effect than the pulse being slightly reduced in number. The patient was in no way quieted by it. Four leeches were now applied to the temples without any good effect.

At 5 P.M. he took \mathfrak{zss} chloroform by the mouth, and continued it every second hour till 11 P.M., when, as he did not sleep, and the delirium continued, he took a similar dose of chloroform every hour through the night.

At 3 A.M. he was somewhat quieter, but the same dose was continued every hour till 8 A.M.

11th day, 10 A.M.—Much quieter, but has not slept. Pulse 119; pupils natural size; subsultus nearly gone; tongue brown all over; sordes on teeth; bowels free; urine high-colored, sp. gr. 1.020. Another dose of chloroform in the same quantity was again administered; about twenty minutes after its exhibition he fell into a quiet sleep, which lasted two hours. Shortly after waking, he took another half drachm of chloroform, when he almost immediately fell asleep, and awoke after several hours much refreshed and quite collected. His return to health was further indicated by the immense quantity of nitrate of urea, which an excess of nitric acid deposited from the urine.

"In the above case the chloroform was longer in producing the effects than in any instance in which I have yet used it. We learn from it, however, that we are not to be discouraged by the apparent failure of the first dose or two in procuring sleep, for, as in the present case, although actual sleep may not be at once procured, we may expect that a state of calm and quietness will be induced, which would soon be followed by sleep. We learn also from this case, that the inhalation of chloroform is, to say the least, useless in procuring sleep in cases of cerebral excitement in fever. I had, on one occasion before, in the Hardwicke Hospital, fully tried this mode of administering it; its inhalation was followed by general convulsive movements, very similar to an epileptic seizure, and I have not since administered it by inhalation in any similar case. Dr. Corrigan carefully tried the effect of inhalation three times in the above case, each time without any good effect."

ART. 6.—Some remarks on Cholera.

By Mr. HEADLAND, late President of the Medical Society of London.

(*Lancet*, Oct. 31, 1854.)

In its epidemic nature, and in the general character of its symptoms, cholera is evidently a blood disease. A serious impression of some sort is made upon this fluid. The suddenness of the attack, its frequent rapidity of progress, and the speedy development in many cases of fatal symptoms, seem all to point to the more vital part of the blood as being impressed in the first instance—i. e., the blood-corpuscles, and not the liquor sanguinis. And there are some other indications of this which would seem to come nearer to the nature of proofs. It has been just observed, that the coldness and blueness of a state of collapse are amongst the most characteristic of the symptoms of cholera. The process is impaired by which the animal heat is maintained. This function is generally admitted amongst physiologists to reside in the blood-corpuscles. The collapse symptoms may occur before the blood has been thickened by the copious discharge from the bowels. It has been observed by Heller, a German microscopist, that the red corpuscles at this period appear "hacked and mutilated,"

as if physically injured. The lacteal and lymphatic glands, organs engaged mainly in the manufacture of the corpuscles of the blood, are found, after death from cholera, to be softened and disorganized. Add to which, that Virchow and others have discovered in the right side of the heart, large whitish coagula, entangling multitudes of white corpuscles, from which it would seem as if these had been somehow prevented from undergoing their normal development into the red cells. The blood-corpuscles being thus injured or arrested in their development, not only are the functions which are essential to life fundamentally and fatally disturbed, but the plasma apparently becomes itself affected in the second place. Now the corpuscles, being solid, cannot be ejected from the system, but the plasma is capable of excretion. Next, then, it is passed out by the mucous membrane of the bowels, as if it were a foreign material, constituting the characteristic colorless or "rice-water" discharges, which contain serum and salts, with mucous and fibrinous coagula. This theory is offered as apparently explaining the phenomena of this disease, which no other notion appears to do satisfactorily. The idea of a morbid poison to be eliminated seems hardly sufficient—the discharges, in their non-feculent character, being so much unlike those of any instance of diarrhoea observed in other diseases. The fact, that the ingeniously devised injections of saline fluids into the veins in the latter stage of cholera, have never succeeded in reviving the patient for more than a brief period, seems to indicate that the thickening of the blood is not to be considered as the sole cause of death, which is probably not to be attributed to the extensive devitalization of that fluid. The fatality of an attack of cholera, no doubt, depends less upon the means which are adopted in the treatment, none of which have been found to control it effectually, than upon the previous condition of the patient himself, rendering him more or less obnoxious to the full effect of the poison. Some have their blood in that peculiar condition which is most likely to be influenced by this. Those who are most impressible are attacked the first, and die the fastest. Afterwards those sicken who are liable in the next degree, none of whom recover. Again, towards the end, those who are least liable, who will escape most easily of all. The epidemic, having then few or none left whose systems it can invade, takes its departure for a season, only to return again when the way is once more prepared for it. By this means we can explain what is always observed, but is at first sight difficult to understand: the terrible mortality of the first outbreak; and the lessening severity of the disease, as though it had become amenable to remedies, remarked at the close. It has been stated on good authority, that the absolute rate of mortality is not increased by the epidemic of cholera; but on taking the average of five years, two before and two after the outbreak of this disease, the real number of deaths is about the same as usual; from which it would seem as though those who are stricken with cholera would, at no long distance of time, have perished of other blood diseases had the opportunity been left to them. This notion of blood liability seems far preferable to the idea of its being a contagious disease. Were the latter the case, it would seem strange that the disease should not spread more regularly, and remain longer at a place, instead of departing so suddenly as it does. (Several facts are here adduced as bearing decidedly against the doctrine of contagion.) The occurrence of the disorder in each case is probably to be accounted for by two distinct things—an epidemic influence, and a pre-existing wrong in the blood of the person attacked. An atmospheric change co-operates with a systemic wrong; we need not define either, but we must admit their agency. Neither of these causes will suffice by itself. Thus a bar of soft iron will not attract a bar of steel; but if we pass a galvanic wire round the former, converting it into a temporary magnet, it will acquire a power which it had not before. The iron and the electricity together will co-operate in effecting what either alone would be powerless to do. We may learn from this conclusion that the cause of the disease is in great part a pre-existing wrong, as well as from the fatal nature of the malady, when it has once fully developed itself,—how important it is to take preventive measures in anticipation of the outbreak. These measures should no doubt mainly consist in all those means which may ameliorate the condition of the poor, or which may serve to counteract those noxious and baneful influences which render the lower and

more densely populated quarters of our large towns the very hot-beds of all epidemic diseases. For this disorder is not one which is equally distributed to all classes; it is shown by the returns of the cholera deaths in 1849, that by far the largest proportion of deaths occurred amongst the laboring classes, and more of the tradesmen died than of the gentry. We may, then, well display our zeal, and evince our real interest in the welfare of our fellow-creatures, by laboring earnestly in the removal of those depressing causes which tend so fatally to shorten their lives and to thin their numbers. In remarking upon the prolific subject of treatment, the author insists strongly upon the erroneous character of the notion, so commonly entertained, of the connection between cholera and ordinary diarrhoea.

These opinions were stated in a paper which was read at the Medical Society of London, of which paper these remarks form an abstract.

ART. 7.—*On a successful method of treating Acute Rheumatism by large and frequent doses of Bicarbonate of Potass.* By Dr. GARROD, Physician to University College Hospital.

(*Lancet*, March 3, 1855.)

In this paper the object of the author is to describe this method of treatment, and also to state the results obtained in fifty-one cases of rheumatic fever which have been admitted, under his care, in University College Hospital, during the last two years and three quarters. The main part of his plan of treatment consists in the administration, in a diluted form, of two-scruple doses of bicarbonate of potash, every two hours, day and night, until the patient has been free from all articular affection and febrile disturbance for two or three days, using local depletion over the heart's region, if any cardiac disease is present or threatened. The author then details three cases of rheumatic fever, illustrating this mode of treatment: the first, a girl, ten years old, in which the duration under treatment was five days, the total duration eight; the second, a young man, aged twenty, with a complication of heart disease, where the duration under treatment was eight, the total duration fifteen days; the third, a young woman, aged eighteen years, in the fifth attack, the former ones having always lasted for a month or five weeks, but which, by the adoption of this plan, yielded in nine days, total duration being but thirteen days, four having elapsed before her admission into the hospital. He afterwards gives a table of fifty-one cases of acute rheumatism; and of each patient the following particulars are noted: The age, occupation, hereditary predisposition, the number and causes of attack; the symptoms before admission; the symptoms during treatment; the nature of treatment; and the duration of the disease. From these cases the following deductions are made—viz.: that in twenty males the duration of the disease under treatment averaged between six and seven days, and the total duration between eleven and twelve days; and in thirty-one females the disease under treatment averaged from seven to eight days, and the total duration between fifteen and sixteen days—giving in all an average under treatment of seven days and a half; and, for the total duration, about thirteen days and a half. The author then alludes to the influence of the bicarbonate of potash when administered in large and frequent doses upon the different organs and functions of the body; and remarks, that it produces neither nausea, vomiting, nor purging—in fact, no symptom of gastro-intestinal irritation. It induces a strongly alkaline condition of the urine, causes it to effervesce freely, with excess of acid, but does not appear to promote an increase in the quantity of the secretion. It appears to render the secretion of the skin less acid—sometimes almost neutral. It acts as a powerful controller of the heart's action, reducing greatly the frequency of the pulse, but without causing the faintness often produced by digitalis, colchicum, &c. It probably increases the alkalinity of the serum of the blood, and diminishes the coagulability of the altered fibrine occurring in rheumatic fever; and hence, probably, checking or preventing the deposits of lymph on the endo- or peri-cardium. It is Dr. Garrod's opinion, that the influence of the bicarbonate was felt not only in shortening the duration of the articular affection, but also in preventing or moderating the cardiac disease. After enumerating many details of the method

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adopted, and the value of certain adjuncts, as opium, calomel, and occasional general depletion, the author proceeds to recommend a plan of treatment which from his experience, he considers as calculated to insure the greatest amount of success, and he thinks it probable that the total duration of the disease might, on the average, be reduced to about ten days,—provided the treatment be adopted early, and no serious complication existed.

ART. 8.—On Scarlatinal Dropsy. By Dr. TRIPE.

(*Medico-Chir. Rev.*, Jan. and July, 1854, and Jan. 1855.)

The following remarks occur in a series of original papers on scarlatinal dropsy in the "*Medico-Chirurgical Review*." They are of great practical importance for they are calculated to give us a clearer insight into the principles which should guide us in the treatment. This they do, by showing that the disease is far more acute in its character than is usually supposed. Dr. Tripe proceeds to show that the day of invasion varies considerably, occurring sometimes during the active period of the primary disease, and in others not until after the lapse of several weeks or more from its outbreak. Most authors consider either the twenty-first, or twenty-second day from the commencement of the disease to be that on which the effusion usually first manifests itself, but an examination of my own cases, and of the returns of the Registrar-General, shows this opinion to be incorrect; for both point to the fourteenth day from the commencement of the febrile stage as that on which the dropsy most frequently occurs. To establish this point, I have analyzed 41 cases which occurred in my own practice and the returns for the year 1848.

An examination of this table shows that the fourteenth was the day on which the dropsy most frequently came on, and that, therefore, the opinion entertained by Dr. Copland and others, that the twenty-second, twenty-third, and twenty-fourth days are those on which, after the twenty-first, it most commonly supervenes, is erroneous. On contrasting, however, the results obtained by an examination of 41 attacks with 323 deaths registered in the returns of the Registrar-General, we find rather opposite results: 17·1 per cent. of the former came on within seven days after the commencement of the scarlet fever, and only 4·8 per cent. of the latter series of cases. (This difference may be accidental, as these 41 cases include all those which I ever remember to have had at so early a period of the disease, and exclude very many which supervened at a later period, as I have not kept a record of all my cases; these having chiefly occurred during the year 1848.) A larger number of cases also—46·4 per cent.—occurred in the second class during the second week, to 38·08 per cent. in the first class. There is also a variation of an opposite character during the third week, when 29·3 per cent. occurred in the second class to 34·16 per cent. in the first; only 4·8 per cent. in the second class during the fourth week to 11·47 per cent. in the first. But these discrepancies may arise from the small number included in the second class, in which each case represents 2·4 per cent. of the whole, whilst in the first it represents only ·31 per cent. It is therefore evident, that the accidental occurrence of a few cases at a particular period in the second class would vitiate all the conclusions. Still the results drawn from these two opposite and independent sources lead to certain uniform conclusions, which will be more fully stated.

On proceeding to a more accurate examination of the first class, we find it indicates that less than 1·0 per cent. of the dropsy occurs on any given day during the first five days of the present disease, 1·24 per cent. on the sixth day, and 1·0 per cent. on the seventh; making a total of 3·24 per cent. during the first week. We find the proportion again to fall during the eighth and ninth days, to 1·0 per cent. gradually to the thirteenth, when it reached 5·87 per cent., and then suddenly to the fourteenth, to 21·67 per cent. (which was by far the highest), making a total of 22·67 per cent. during the second week, of 38·08 per cent.; or of 47·67 per cent. during the first fortnight from the commencement of the fever. It also indicates that 2·4 per cent. of attacks happened during the third week, and 12·38 per cent. on the twenty-first day; that 11·47 per cent. supervened during the fourth week, 4·03 per cent. on the twenty-eighth day; that 4·34 per cent. came on during the fifth week.

per cent. during the sixth week, .62 per cent. during the seventh week, and .31 per cent. during the ninth week. The cases in the second class indicate the seventh, ninth, twelfth, fourteenth, and twenty-first days, as those on which the disease

TABLE XVI.
Scarlatinal Anasarca. Day of Invasion for the Year 1848.

Reports of Registrar-General. 1st Class.			Case Book. 2d Class.	
Day of Scarlatina.	Total No. of Cases.	Per Cent.	Total No. of Cases.	Per Cent.
1st,	2	.62		
2d,	2	.62	2	4.9
3d,	2	.62	1	2.4
4th,	1	.31		
5th,	2	.62		
6th,	4	1.24	1	2.4
7th,	18	5.56	8	7.4
	<u>31</u>	<u>9.59</u>	<u>7</u>	<u>17.1</u>
8th,	2	.62	1	2.4
9th,	3	.98	4	9.8
10th,	9	2.78		
11th,	10	3.10	1	2.4
12th,	10	3.10	6	14.7
13th,	19	5.87	1	2.4
14th,	70	21.67	6	14.8
	<u>123</u>	<u>38.08</u>	<u>19</u>	<u>46.4</u>
15th,	16	4.95		
16th,	4	1.24	3	7.4
17th,	12	3.71	1	2.4
18th,	17	5.26	1	2.4
19th,	5	1.55	1	2.4
20th,	18	5.57	1	2.4
21st,	40	12.38	5	12.3
	<u>112</u>	<u>34.66</u>	<u>12</u>	<u>29.8</u>
22d,	6	1.86	1	2.4
23d,	8	.98		
24th,	8	.98		
25th,	6	1.86		
26th,	4	1.24	1	2.4
27th,	2	.62		
28th,	13	4.08		
	<u>87</u>	<u>11.47</u>	<u>2</u>	<u>4.8</u>
29th,	0	—		
30th,	4	1.24		
31st,	1	.31		
32d,	2	.62		
33d,	1	.31		
34th,	1	.31		
35th,	5	1.55		
	<u>14</u>	<u>4.34</u>		
5 to 6 weeks,	3	.93		
6 to 7 "	2	.62	1	2.4
7 to 8 "	0	—		
8 to 9 "	1	.31		
Totals,	323	100.00	41	100.0

most frequently shows itself; and those of the first class, the seventh, thirteenth, fourteenth, eighteenth, twentieth, and twenty-first days. Of the 323 deaths, 59.41

per cent. took place on the seventh, twelfth, thirteenth, fourteenth, eighteenth, twentieth, and twenty-first days; and 56·3 per cent. of the attacks also happened on the same days. We may therefore state that the fourteenth day from the commencement of the fever is that on which the invasion of scarlatinal dropsy most frequently happens; and that the other days on which the invasion most frequently occurs, are the twenty-first, twelfth, and seventh, the order of frequency being as they are here placed; and then the thirteenth, eighteenth, and twentieth respectively; these latter presenting but slight variations as to frequency.

The duration of the dropsy, although a point of some importance as regards prognosis, is one which has not been hitherto statistically considered. The disease is usually looked on as one of rather a chronic character than otherwise, unless it prove fatal in the first stage. The following table places this point on a certain basis.

TABLE XVII.—*Scarlatinal Anasarca. Duration before Death.*

Duration.	Total No. of Deaths.	Per Cent.
1 days,	5	1·1
2 "	9	2·0
3 "	14	3·1
4 "	16	3·5
5 "	18	4·0
6 "	24	5·8
7 "	54	12·0
8 "	21	4·4
9 "	8	1·8
10 "	28	6·2
11 "	2	0·4
12 "	12	2·6
13 "	13	2·9
14 "	66	14·6
2 to 3 weeks,	98	20·7
3 to 4 "	82	7·1
4 to 5 "	19	4·2
5 to 6 "	8	1·8
6 to 7 "	1	0·2
7 to 8 "	5	1·1
2 to 3 months	1	0·2
3 to 4 "	1	0·2
4 to 5 "	1	0·2
5 to 6 "		
Exceeding 6 months,	2	0·4
Total,	452	100·0

This table shows, that out of 452 fatal cases, 28, or 6·2 per cent. deaths happened during the first three days, 16 on the fourth, and 18 on the fifth; making a total of 62, or 13·7 per cent. during the first five days; 24 on the sixth day, and 54 on the seventh; being an aggregate of 140, or 31·0 per cent., during the first week. During the second week, 149 deaths, or 32·9 per cent., occurred in the following proportions on the different days—viz., 4·4 per cent. on the eighth, 1·8 per cent. on the ninth, 6·2 per cent. on the tenth, 0·4 per cent. on the eleventh, 2·6 per cent. on the twelfth, 2·9 per cent. on the thirteenth, and 14·6 per cent. on the fourteenth day. We thus see, that of these 452 cases, 63·9 per cent. died during the first fortnight. Of the remaining 36·1 per cent. 20·7 were fatal during the third week, making the sum of 84·6 deaths per cent. in the course of the first three weeks. It also shows that 7·1 per cent. deaths happened in the fourth week, 4·2 per cent. in the fifth week, 1·8 per cent. in the sixth week, 0·2 per cent. in the seventh week, 1·1 per cent. in the eighth week, and only 1·0 per cent. subsequently. The table also affords the elements for calculating the average duration of the disease. Thus by multiplying the duration in days by the number of deaths which occurred on each day, and then dividing

the sum by the total number of deaths, taking the average for the second and third, and third and fourth weeks, &c., on the eighteen and twenty-fifth days, we arrive at the conclusion that the average duration of the disease in 447 cases of the total 452 cases, in which death happened before expiration of two months, was 13.9 days; and of the total 452, allowing a duration of seven months each for the two cases whose duration exceeded six months, was 15.3 days.

These tables may be of much use in forming a prognosis: thus, if a child have survived a fortnight, it is more likely to recover than it was on the first day, in the proportion of more than two to one; if three weeks, of more than four to five, &c.

From the foregoing investigation we are entitled to draw the following inferences: (a) that nearly one-third of all the fatal cases of scarlatinal dropsy may be expected to die within the first week of the disease; (b) that considerably above one-half (say 63 per cent.) may be expected not to survive the first fortnight; (c) that the average duration of acute cases (*i. e.*, those which are fatal in less than a month) is 12.0 days; and of all cases, 15.3 days; and lastly (d), that the particular days on which the disease is most fatal are the seventh and fourteenth, no less than 54 cases, out of 452, having been registered as fatal on the former and 66 out of the same number on the latter day.

(C) CHRONIC DISEASES.

ART. 9.—*On the diagnosis of Cancer by the Microscope.* By (1) MM. VELPEAU, ROBERT, and others; and (2) Professor BENNETT, of Edinburgh.

1. (*Archiv. Gén. de Méd.*, Nov. and Dec. 1854, and Jan. and Feb., 1855.)
2. (*Edinburgh Monthly Journal*, Feb., 1835.)

1. The Academy of Medicine in Paris has recently been the scene of a long and irate discussion on the curability of cancer—a discussion which resolved itself practically into a question of diagnosis by the microscope. Some of the older members, with Velpeau and Cloquet for chiefs, believe in the curability of cancer, and disbelief in all microscopic evidence to the contrary. Other members, among whom are MM. Robert and Barth, regard the microscope as furnishing the only true diagnosis of cancer, and say that any cancer so diagnosed is incurable. Others, again, took a medium position, and believed that the microscope cannot be dispensed with, but that it is not sufficient of itself to lead to a correct diagnosis. M. Malgaigne was the defender of the position, which is no doubt the correct one.

2. The position which M. Malgaigne defended in this controversy before the Academy of Sciences, is, indeed, that which would be taken by all who are best informed on the subject. It is taken, for example, by Professor Bennett, in his treatise on "Cancerous and Canceroid Growths," thus:

"The microscope *alone*—that is, independently of all other kind of observation—can seldom determine in the living subject the presence or absence of cancer. At the same time, the author feels himself bound emphatically to declare, that he thinks it capable of being as serviceable to the surgeon in cases of morbid growth, as the stethoscope is to the physician in cases of diseased heart or lungs. Neither instrument is infallible; both require to be studied in an especial manner; both demand long practical experience, and judicious reasoning power; and both require to be conjoined with all the aids to be derived from other modes of observation. With the stethoscope, it is not that the crepitating râle in pneumonia, or the mucous râle in bronchitis, differ from similar râles which accompany tubercular disease, but that these signs, *conjoined with other symptoms*, clearly establish the diagnosis. So, likewise, it is not the recognition, by means of the microscope, of certain cells and fibres, which will enable us to assert with certainty the existence of cancer; but that their detection in particular places, and accompanying peculiar forms of growth, permits us to do so. In proportion as our knowledge of morbid anatomy advances, instrumental assistance becomes the more valuable for the purposes of diagnosis; and it is now

manifest that, to this end, a microscope is as necessary to assist our sense of sight, as is a stethoscope to assist our sense of hearing, or a probe to assist our sense of touch."

ART. 10.—*On the treatment of the Marsh-cachexy by Arsenious Acid.*

By M. DECAISNE.

(*Gaz. Hebd. de Paris*, Feb. 23, 1855.)

Encouraged by the strange accounts which are related by M. Tschudi as to the effects of the habitual employment of arsenic in some parts of Styria and the Tyrol M. Decaisne was determined to try whether this substance would have the effect of counteracting the marsh-cachexy. With this view he got his patients to stint their ordinary quantity of food (why he did this is not very obvious), and gave them $\frac{1}{2}$ th of a grain of arsenious acid every morning. The results were very unfavorable. During the first fortnight or three weeks, indeed, the patients presented no manifest alteration, but after this time they grew manifestly worse—the pallor augmenting, the pulse becoming more feeble, while at the same time they began to suffer from sensations of cold in the back, from extreme languor, from œdema of the feet, &c. These symptoms had to be corrected by rest, food, quinine, and steel.

ART. 11.—*On the advantages of large doses of Quinine in the treatment of Inter-mittents.* By Dr. MURCHISON, Physician to the Westminster General Dispensary, and late of the Bengal Medical Service.

(*Edinburgh Medical and Surgical Journal*, Jan. and April, 1855.)

These remarks occur in some valuable "Notes on the Climate of Burmah, and on the Diseases which there prevailed among European Troops." Dr. Murchison writes:

It has been a matter of considerable question, whether the quinine should be given in one large dose, or in repeated small doses during the intermissions. Dr. Home of Edinburgh, from his experiments, pronounced in favor of the repeated small doses, as also Dr. Barker of Dublin. Dr. Brown, in the "Cyclopædia of Practical Medicine," recommends two grains every three hours, or four every six, during the intermissions; but he allows, that in those cases in which "life probably depends on the prevention of a paroxysm," it should be given in much larger doses, such as a scruple. Dr. Watson of London is also favorable to the repeated small doses, amounting to 12 grains in the 24 hours, which plan, he says, he has found most successful, though, at the same time, he acknowledges, that a "very few paroxysms have occurred after the patient has begun to take the medicine." He also urges this plan on economical grounds, it being our object, he says, to make the cure "as cheap as possible." On the other hand, we have practitioners recommending large doses. Dr. Elliotson gave a large dose just after the paroxysm, and smaller repeated doses during the remainder of the intermission, amounting, in all, to 20 or 30 grains in 24 hours. Dr. Copland recommends a full dose, 6 to 8 grains, immediately after the fit, or shortly before its return, or a large dose followed by smaller doses every three or four hours. Dr. Shapter, in "Tweedie's Library of Medicine," remarks, "Some physicians have administered it to the extent of 20 grains at a dose, and have by this means succeeded in putting an immediate stop to the disease."

Dr. Christison, in his "Dispensary," says, the intermittents of the Tropics require 36 or 40 grains on an average; and, in a clinical lecture delivered in Edinburgh (March 19, 1850), he stated, "It is better to give a large dose at once, such as 36 grains, which has been shown to be the average amount required in India." Dr. Christison informs me, that his calculation, that 36 grains was the average dose necessary for the cure of tropical intermittents, was deduced from reports on the febrifuge virtues of quina, made by medical officers of the Madras army, at the request of the Medical Board, and published in the Madras Medical Reports for 1831.

In America, the medium dose is stated by Dr. Watson to be eight grains.

Continental practitioners seem to be also in favor of the repeated small doses.

Thus, Rayer, in his article on fever, speaking of French practitioners, says, that though sometimes 5, 10, 20 or even 30 grains are given at one dose, yet the great majority of practitioners, in place of giving one large dose, divide it into several, which are given at intervals of one or two hours, during the intermissions.

In Italy, Dr. Watson says, the physicians find small doses inadequate, and are in the habit of giving 12, 24, or even 30 grains at a time. I found myself, however, during a protracted residence in the north of Italy, that the general practice consisted in administering repeated small doses. On the other hand, we find a German physician, Dr. Pfeufer, of Heidelberg, recommending the administration of a single large dose, in preference to the repeated small ones.

In India the practice by repeated small doses has been, and still is, the most general; and I myself shall never forget the look of astonishment with which an apothecary of some standing in the Indian service regarded me, when the "new assistant-surgeon" ordered a scruple dose of quinine. The attention of the profession in India, however, is being now called to the superiority of the treatment by large doses, and principally owing to the advice of the late Superintending-Surgeon Corbyn, who, in a published annual report on European troops, states, that he has long been convinced of the efficacy of this mode of giving quinine, and mentions the results of the experience of several medical officers, to whom he had recommended the practice. Of these, Dr. Mackinnon, who had been in the habit of giving half-drachm doses of quinine at the termination of the sweating stage, says, "I have never seen it fail to put a stop to the disease at once." Dr. Mactier speaks equally favorably of the practice.

On my first arrival in India, I had resolved to put to the test of experiment the practice recommended by my former preceptor, Dr. Christison; and I was not a little gratified in afterwards finding, by the published report of Dr. Corbyn, that results, equally favorable with my own, had been obtained by other observers. The result of my observations, then, on the 115 cases, goes to prove that the practice most effectual in at once checking the paroxysms of ague, is that of administering one large dose of quinine during the third or sweating stage. The usual dose given was 20 grains in a draught, with a few drops of sulphuric acid to increase the solubility of the salt. Generally this was followed by a few two-grain doses, twice or thrice a day, *per precauzione*, as the Italians say; but I believe that this is hardly necessary. In no case, even in those in which there had been violent headache and other symptoms of cerebral congestion during the paroxysm, did I observe any unpleasant symptoms from the physiological action of the drug. Many of the patients complained of slight buzzing sounds in the ears, but I believe that more or less of this symptom is necessary for the sure success of the medicine; at all events, when it occurs, it is a sign that there is no use of pushing the medicine further. In 95 of the 115 cases, this treatment by the one large dose was adopted. In 56 of these 95 cases, or 59 per cent., the paroxysms were at once checked, there being no return after the administration of the single large dose of quinine. In 36 cases, or 37.9 per cent., there was only one paroxysm; and in 3 cases, or 3.15 per cent., two paroxysms, after the quinine. In all the cases, moreover, in which there were any paroxysms subsequent to the administration of the large dose of quinine, these were much milder than the preceding ones, often not occurring, until after the intermission of upwards of 24 hours, or being unaccompanied by rigors in the cold stage; while, in several instances they appeared to be owing to costiveness of the bowels; for it seemed necessary for the successful administration of quinine by any plan, that the bowels should be freely moved.

Again, in 16 out of the 115 cases, the ordinary plan of treatment was followed by repeated small doses of two or three grains of quinine, during the intermissions. In not one of them were the paroxysms at once checked; 5 of them had one paroxysm after the commencement of the quinine; 7 of them had two; and 4 three. Moreover, if we may reckon as any indication of the inveteracy of the fever, as I think we are fairly warranted in doing, the number of paroxysms which have preceded the commencement of treatment, the 95 cases, in which the paroxysms were almost at once checked by the one large dose, were, on the whole, more inveterate than the 16, in which the other plan of treat-

ment was adopted. Thus we find, by another column in the table, that the average number of paroxysms before treatment, in the 95 former cases, was $2\frac{1}{4}$, or rather more than $2\frac{1}{2}$, while the average in the 16 latter cases was only $2\frac{1}{4}$. The above facts will speak for themselves. For the success of the treatment, it is necessary that the large dose be given during the third stage, and as near its commencement as possible. It is far from being so effectual, when given during the intermissions between two paroxysms, or a few hours before the expected commencement of a paroxysm, as is recommended by some writers.

- Thus, in the 4 cases which remain of the 115, the large doses were given during the intermissions: in not one of them were the paroxysms at once checked; 2 of them had two subsequent paroxysms, the other 2 had one, the average number of paroxysms before treatment in the 4 cases being two. Latterly, I always gave instructions that the quinine should be given, as soon as the patient began to perspire freely after the hot stage.

Again, in answer to Dr. Watson's other argument in favor of the repeated small doses, that it is the cheapest, we would reply that we believe such is not the case. Not only is the plan of treatment above recommended the most efficacious in checking the paroxysms, it is also the most economical as regards the expenditure of quinine. This, too, is the point of the highest importance, when we consider the immense expense the purchase of quinine must cost our Indian government annually, and the chances there are of the supplies of the drug at some future period running short. We have already stated, on the authority of Dr. Christison, that the average amount of quinine found necessary to check the paroxysms of ague in India was about 36 grains, and we believe that this quantity is often greatly exceeded. The contrast, however, between the two different plans of treatment, as regards the expenditure of quinine, is very striking. In 92 cases treated by one large dose given during the third stage, the average quantity required to check the paroxysms was only $23\frac{3}{8}$ grains, while in those treated by repeated small doses, the average quantity required for the same purpose, was almost double, or $45\frac{1}{4}$ grains. In addition to the advantages of the plan of giving quinine just recommended, on the grounds of its greater efficacy and economy, there are others which may be mentioned. Thus, it enables the patients to return to their duty much sooner than the old plan—a matter of no small importance in military practice; and it gives less trouble to the apothecaries and hospital attendants.

ART. 12.—*On the treatment of Intermittents by Cinchonine.* By M. HUDELLET, Physician to the Hospital at Bourg (Ain).

(*Réu. Méd.-Chir. de Paris*, Jan. 1855.)

Living in a country where marsh-fevers are endemic, and attached to a hospital where ninety beds were under his care, of which beds the half were usually occupied by persons suffering from these fevers, M. Hudellet has had abundant opportunity of treating these maladies, and this opportunity has not been neglected. For more than twenty-five years, he tells us, he has tried all manner of remedies in the hope of finding some cheap substitute for quinine, and almost invariably with disappointment, until March, 1853, when he began to use cinchonine. Since this time quinine has been almost altogether supplanted. He gives from 30 to 40 centigrammes of the sulphate of cinchonine in solution, adding to the first 3 or 4 doses, from 10 to 20 drops of laudanum, and the result is that out of 507 cases of intermittents of all kinds, all were cured except 9. This mode of treatment did not cause any disorder, either in the stomach, or in the head. Relapses were neither more nor less common than after quinine; and the spleen was affected in the same way, and to the same degree, as by quinine. Indeed, upon the whole, cinchonine was as effective a remedy as quinine, and, therefore to be preferred, because cheaper. It is also as effective as a prophylactic.

It is difficult to reconcile these statements with other statements respecting cinchonine, but this is what M. Hudellet has to say.

ART. 13.—*On Quinidine in Intermittent Fever.* By (1) Dr. PEPPER, Physician to the Pennsylvania Hospital; (2) Dr. UPSHUR, Surgeon to the U. S. Marine Hospital, Norfolk, Va.; and (3) Dr. CULLEN, Assistant-Physician to the Philadelphia Hospital.

1 and 2. (*Philadelphia Medical Examiner*, Sept. and Dec. 1854.)

3. (*American Quarterly Journal of Medical Sciences*, Jan. 1855.)

1. In our last volume is an important article by Dr. Pepper on the use of quinidine in intermittent fever, and we here again refer to it in order to correct a typographical error, by which, unfortunately, *Quinoidine* was substituted for Quinidine. We beg our readers to understand, then, that it is of Quinidine that Dr. Pepper speaks in the article referred to.

2. Since this time, Dr. Upshur has carried on the same inquiry, and, in the paper before us, he gives the results of 30 cases, 20 of which occurred in private practice, and the rest in hospital. "These cases," he says, "are sufficient to show that quinidine is undoubtedly an agent of considerable efficacy, in the treatment of intermittent fever. I am not yet prepared, however, to assent fully to Dr. Pepper's remark, that the quinidine is more active than either sulphate of quinia or cinchonina. A large majority of my cases required from fifteen to thirty grains to arrest the paroxysm, while in several, after the fairest trial, the disease did not succumb until quinine was resorted to."

"During the past season I treated a few cases of remittent, and the graver forms of miasmatic fever with quinidine. The results were exceedingly satisfactory, and I have no hesitation in saying, that, as an anti-miasmatic, it holds in my confidence, the next place to sulphate of quinia."

Of Dr. Upshur's thirty cases, the following are taken indiscriminately as examples:—

CASE 1.—E. T., a female, æt. 14, was seized with chill on the 21st of September, followed by high fever and intense aching of the head, back, and limbs. The paroxysm came on at 8 o'clock, A.M., and was repeated on the 22d at the same hour. Visited her in the afternoon; pulse full, 120; skin dry and hot; thirst urgent; nausea and vomiting; tongue clean; bowels regular; no abdominal tenderness. Ordered Quinidine Sulph., gr. x.; pil. v.; one every hour.

23d.—Did not retain the first two pills; slept tolerably well, the fever declining about 5 o'clock, P.M., with perspiration; bowels moved once; no appetite; pulse 80, small; thirsty, and looks as if she would have another paroxysm.

R Quinidine Sulph., gr. x.

Chart. 5. One powder every hour.

Two of the powders were thrown up as soon as swallowed; she missed the paroxysm, however, and has had no return. The whole quantity of quinidine retained was 16 grains.

CASE 2.—J. G., æt. 17, was seized, September 21st, with quotidian intermittent, the paroxysm occurring at 10 A.M. Saw her on the evening of the 22d skin hot and dry; pulse 136, small and feeble; bowels regular, less aching than in the morning.

R Quinidine Sulph. gr. x.

To be given at one dose.

The paroxysm recurred next day at the usual hour, but with some abatement in intensity.

R Quinidine Sulph. gr. x.

Pil. 5. One every hour.

She missed the paroxysm on the next day, and had no return afterwards. was slight ringing in the ears.

CASE 3.—E. T. B., male, æt. 45, seized with intermittent of tertian type paroxysm occurring at 1 P.M. Saw him on 23d, and prescribed Quinidine gr. xv; pil. 4; one every hour. On the next day he had a light attack usual hour; and on the day after (25th), I ordered for him Quinidine 5; pil. 2; one every three hours. He had no return of the disease.

CASE 4.—R. F., a male, æt. 6 months, was seized, on 22d of September, with tertian intermittent, the paroxysm occurring at 3 o'clock, P. M. He has cough of several weeks' standing, and is a good deal emaciated from cholera infantum; his fevers decline without moisture. I saw him on 25th, and prescribed, Quinidine, gr. viii, Aquæ, 3j. M. S. a teaspoonful every hour. The paroxysm came on next day as usual, but it did not return afterwards.

CASE 5.—T. F., a male, æt. 6 years, in the same house, seized, Sept. 17th, with intermittent of the quotidian type, the paroxysm occurring in the afternoon. The fever is usually very high, and declines without moisture; bowels regular, and appetite good. This child had recently had an attack of scarlatina. I saw him on 25th Sept., and ordered Quinidine, gr. x; pil. 5; one every hour. He had no return of the disease.

CASE 6.—J. C., male, æt. 6, seized, Sept. 26th, with well-marked chill, having for several days before, at the same hour, suffered from slight feverishness. On the 26th, the paroxysm came on in the night, the fever was high, and declined without moisture. I found him on the next day with a dry skin, and thirst, but no febrile movement; bowels were regular, and there was no abdominal tenderness. Ordered Quinidine, gr. xij; pil. 6; one every hour. He took all the pills, and had no return of the disease.

CASE 7.—Mrs. W., æt. 19, seized, Sept. 23d, with tertian intermittent. The paroxysm comes on at noon, and is marked by long chill, intense fever, which declines without moisture, and general aching of the head, back, and limbs. She is nursing a very hearty child, and has a chronic diarrhoea of two months, the dejections being liquid, and yellowish, and unaccompanied by pain. Saw her Sept. 28, during the paroxysm, and ordered Quinidine, gr. xv; pil. 6; one every hour. On the 30th, she had another paroxysm, but less intense, and I prescribed Quinidine, gr. x; pil. 5; one every two hours. She had no return of the disease.

CASE 8.—Mr. B., æt. 30, seized, Sept. 25th, with general aching, followed by fever; bowels became disturbed on 26th, the dejections being very frequent, liquid, and painless; on 27th, he had nausea and vomiting; paroxysm of fever occurs every afternoon, being preceded by only a little stretching. Saw him on 28th; no abdominal pain, but the bowels are moved every hour; no appetite; skin dry; very thirsty.

R Quinidine, gr. xv;
Acide. Sulph. dilut., ʒiiss;
Tr. Lav. c., ʒij;
Tr. Opii, ʒj;
Aquæ Camph., q. s. ʒij;
M. A teaspoonful every hour.

His bowels soon became relieved; and on the next day he was sitting up, missed the paroxysm, and had no return afterwards.

CASE 9.—Mrs. S., æt. 18th, pregnant, seized, Sept. 14, with quotidian intermittent. I saw her on the 28th. Up to the 25th, she had a well-marked chill, followed by fever. Since the 25th, the paroxysm was ushered in by simple aching and thirst. She had been freely purged with calomel and jalap; spleen enlarged; no abdominal tenderness.

R Quinidine, gr. xv.
Pil. 6. One every hour.

She had no return of the disease.

CASE 10.—Miss S. æt. 16, was seized, Sept. 30th, at 8 A. M., with chill followed by fever, which declined without moisture. On the 28th, she had slight chilliness, and aching, but the paroxysm was not well marked. Saw her Oct. 1st, and prescribed Quinidine, gr. xv; pil. 6; one every hour. The last pill was taken at 9½ P. M. The paroxysm came on next day, Oct. 2d, an hour earlier, and was more intense; the back, head, and limbs, ached violently, pulse was 124, and full, with hot skin, and urgent thirst. The bowels not having been moved for two days, I ordered Pil. Comp. Cath., three to be taken at once. She missed the paroxysm on the 4th, and had no return of it.

CASE 11.—Mrs. B., æt. 33, seized, Sept. 30th, with chill, well marked; thinks

she had slight chills for several days before; tertian type. Saw her Oct. 2d; the paroxysm came on at 12 M. on 30th, and at 8 A. M. to-day; fever prolonged, and declined with a dry skin; bowels regular; aching intense; nausea, and abdominal tenderness.

R Quinidine, gr. x.
Pil. 5. One every hour.

She missed the paroxysm on 4th, and had no return of the disease.

CASE 12.—Leah, colored, æt. 15, was seized with intermittent of tertian type, Sept. 30th. Saw her on 2d Oct.; the paroxysm occurred on that day at 11 A. M., and was characterized by the usual symptoms; bowels regular; no abdominal tenderness. Prescribed Quinidine, gr. xv; pil. 6; one every hour. On the 4th, there was another paroxysm, more intense than any previous one. The fever continued unabated for upwards of six hours, and, in addition to the intense aching of the head and limbs, she had violent pain at the epigastrium, with nausea and vomiting; bowels had not been moved for two days. Being absent from the city, the case was seen by my friend Dr. Robt. B. Tunstall, who prescribed Calomel, gr. x, to be taken at once, with a tablespoonful of the following mixture every hour, until the colic was relieved.

R Anodyn. Hoff., ʒss;
Tr. Lav. c., ʒss;
Aque q. s. ʒiv. M.

On the next day, Oct. 5th, I found the bowels had been freely moved, and the pain in the stomach entirely relieved. Ordered Quinidine, gr. xv; pil. 6; one every hour. She missed the paroxysm on the 6th, and had no return of the disease.

CASE 14.—S. B., male, æt. 18, was seized with intermittent, Sept. 26th; visited him Oct. 2d. Has a paroxysm in the morning one day, and in the afternoon next day; double tertian type. The paroxysms are ushered in by slight chilliness, and attended by intense aching, and abdominal tenderness; bowels regular, and fever declines with a dry skin.

R Quinidine, gr. x.
Pil. 5. One every hour.

On the 4th, I made this note: had no chill yesterday, but fever, with aching, &c. This morning, feels languid, but has no fever, and no aching; complexion very sallow; tongue clean and pale; no appetite.

R Quinidine, gr. x.
Pil. 5. One every hour.

At my visit on 6th, found him walking about, and fairly convalescent. He had no relapse.

CASE 15.—I. T., male, æt. 10, seized Sept. 22d, quotidian type; chills not well marked; febrile movement considerable, accompanied by thirst, aching, &c. and declines with a dry skin; the paroxysm is worse every other day; bowels regular; some abdominal tenderness. I visited him Sept. 26th, and prescribe Quinidine, gr. xv; pil. 6; one every hour. On 27th and 28th, the paroxysm came on as usual, with no abatement in their severity. R Quinidine, gr. x; pil. 6; one every two hours. There being no improvement on the 1st of Oct., I ordered *Quinia Sulph.*, gr. xx; pil. 8; one every two hours. He missed the paroxysm on the 3d, and had no return afterwards.

CASE 16.—Mrs. H., æt. 36, sent for me Sept. 29th. For eight days before had suffered from headache and fever, which came on every day at 1 lasted about six hours, and declined without moisture. She has suffered severely, for two years past, with frequent attacks of uterine hemorrhage. pale and enfeebled. Prescribed Quinidine, gr. xv; pil. 6; one every two

Oct. 2.—Has had a paroxysm every day since the last note: cannot have been less severe.

R Quinidine, gr. x.
Pil. 5. One every hour.

Oct. 4th.—*In statu quo*; the occurrence of the paroxysm seems so far to be uninfluenced by the treatment.

R Quinæ Sulph., gr. xv.
Pil. 6. One every two hours.

She missed the paroxysm next day, and had no return of it.

3. Dr. Cullen gives a tabular account of 180 cases of intermittent fever, which were treated in the Philadelphia hospital during the last few months. The patients were chiefly Irish and German laborers, who had been employed in the canals, and about the banks of the rivers; and in many of them, their anæmic appearance and enlarged spleens showed that the disease was of long standing. After the "chill" was arrested, the patients took, for a few days, a mixture of serpentaria, bark, and gentian, with steel. Dr. Cullen proceeds:

"Of the 180 cases recorded, 111 were of the quotidian type, 35 of the tertian, and 31 of the tertian and quotidian, i. e., began as tertian, and entered the house as quotidian, or the reverse, while there were three cases of double quotidian. This is an unusually large proportion of quotidians, but it must be remembered, that the patients were, at least many of them, of bad habits, greatly exposed, or unwilling to give up their means of support as long as there was not a daily interference with the pursuit of it; besides which, much allowance must be made for what may be their erroneous statements. In 129 cases the chill was arrested by fifteen grains of the salt, and there was no return of it; though it must not be forgotten, that these patients were, as before said, kept steadily under the use of a compound infusion of cinchona with iron. On the seventh, fourteenth, and in those remaining on the twenty-first day, ten grains of the sulphate of quinia were again exhibited.

"Upon the whole, so well convinced is the writer of the merits of sulphate of quinia, that with him it has entirely superseded the salt of quinia; being, he believes, quite as efficient in the treatment of intermittent fever, while its price, about one-third less than that of sulphate of quinia, renders it especially desirable for large hospitals, among the poor in private practice, and with all who are influenced by considerations of economy."

ART. 14.—*Illustrations of some points in the history of Gout.*—By DR. GARROD.

(*The Lancet*, Feb. 24, 1855.)

In this paper the author considers the chronic states of the articular and non-articular forms of gout. It is difficult, he tells, us to separate some forms of acute gout from acute rheumatism, but it is more difficult still to separate these maladies in their chronic state. As to the symptoms which might be brought to bear upon this diagnosis, it is allowed by all that the chalk-like deposits, or chalk-stones, are never found except in the subjects of true gout. In composition these deposits consist essentially of urate of soda, the difference met with in the analysis being dependent on the tissues in which they occur; they are alkaline in reaction, and, at first, fluid, going through different degrees of consistence till they become solid. The situations in which they are found vary exceedingly. They are found within and around the joints, around the ligaments and sheaths of tendons; on the surface of the cartilage of the joints; and under the cuticle, &c. When occurring within the joints, they produce a roughness on the cartilage, and greatly impede motion. They may remain in the body during the lifetime of the patient, which, probably, is generally the case; or they may be discharged by a kind of desquamation, when more deeply seated, by causing inflammation or ulceration. When these deposits occur where they may be readily seen—as, for instance, around the joints, the diagnosis of the case is easily made; but they are not unfrequently confined to a single part of the body, and then are likely to be overlooked by the practitioner. The ear, and sometimes the integuments of the face, are the parts most commonly selected externally, where they may exist singly, or in numbers. They exist more frequently in the ears than has been generally supposed; and it is ascertained, from a collection of cases made, that deposits were present in 45.9 per cent. of gouty cases, in seven-tenths of which

the ear alone was affected. The author relates two cases to show how greatly the diagnosis may be assisted by the discovery of these minute concretions. Though they are indications of gouty affection, their absence is no proof of the disease not being gout; they are frequently absent, and patients may suffer gout for many years without their being formed. On the other hand, some of the worst cases of deposits have occurred within three or four years from the first attack in the great toe. Another valuable diagnostic symptom is the special great toe affection, and Dr. Garrod shows that, out of a number of cases noticed by him, in eighty-two per cent. this was present. This symptom is the more valuable that it seldom, if ever, occurs in rheumatism. The sex, too, is not to be disregarded, as gout is much more common in males than females; out of a table of cases, only five per cent. were females, which would hardly be the case in the pathology of the two diseases were alike. Oedema, and subsequent desquamation of the cuticle, is almost invariably present in gout, the desquamation showing itself when the inflammation is subsiding. These signs occur very seldom in genuine rheumatism. He also mentions, among other symptoms, some minor points, which, in conjunction with others, might be of some use in diagnosis—viz., the presence of heart affection in rheumatism from prior attacks of acute disease, the dyspeptic accompaniments of gout, the influence of cold and moisture in inducing rheumatism, and of high living, especially of wine and malt liquors, in bringing on gout; and lastly, the condition of the blood and blister fluid. In all cases of pure gout the blood contains an abnormal quantity of uric acid, which is not the case in rheumatism; and in cases where the other symptoms are not characteristically developed, the presence or absence of uric acid in the blood may afford evidence as to the nature of the affection. In the place of abstracting blood, of which only a small quantity is requisite (an ounce or so), the examination of the serum produced by a small blister has the same result.

ART. 15.—*On Blennorrhagic Rheumatism.*

By M. BRANDES, of Copenhagen.

(*Archiv. Gén. de Méd.* Sept. 1854.)

M. Brandes allows the existence of this form of rheumatism, but he believes that it has no other distinctive feature than mere coincidence with blennorrhagic discharge. Thus, if a person, who has never had any rheumatic symptoms, is attacked with these symptoms along with gleet; if these symptoms disappear with the gleet, and again reappear when the gleet returns, the patient being quite free from rheumatism in the interval, and particularly if there have been several concurrent attacks of pain and discharge, with free intervals, then, and only then, can we pronounce positively as to the rheumatism being blennorrhagic rheumatism. This coincidence of pain and discharge is, in fact, the only guide.

M. Brandes relates nine cases in illustration.

ART. 16.—*The prevention of Syphilitic Infection by Perchloride of Iron.*

By M. RODET, of Lyons.

(*Gaz. Hebdom.* Jan. 12, 1855.)

M. Rodet proposes to destroy the syphilitic virus before it has time to get into the system, by thoroughly bathing the part to which the virus has been applied with one of these lotions, viz.:

1. Perchloride of Iron,
Citric Acid,
Hydrochloric Acid, each 3j;
Water, ʒj.
2. Perchloride of Iron, 3j;
Hydrochloric Acid, ʒiiss;
Water, ʒj.

Of these two lotions, the last is the most irritating, but neither of them can

any irritation of the least moment. M. Rodet tested their anti-syphilitic virtue by inoculating himself and others with the virus, and then using the lotion; and he found that the virus was invariably destroyed.

M. Rodet also tried a similar experiment with the vaccine virus, and with a like result; and upon this fact he asks, whether the development of the various pustules may not be prevented, and their consequent disfigurement avoided, by washing the skin with one or other of the lotions. He proposes, also, to apply the same agents to parts bitten by dogs and other animals, with a view to the neutralization of any virus which may be lodged in the wound.

SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 17.—*On the immediate cause of Coma and Insensibility.*

By Dr. SNOW.

(*Lancet*, Dec. 23, 1854.)

In Dr. SNOW's opinion, coma and insensibility, though met with under a variety of circumstances, are always caused by the interruption of the process of oxidation of the brain and nerves, which process is necessary to consciousness, sensibility, and all the other animal functions. The effect of respiration, which is a process of oxidation, is very evident on the fœtus, the moment it begins to breathe the air, in exchange for the imperfect oxygenation of the blood previously effected through the placenta. In asphyxia, the privation of oxygen causes coma and insensibility, whilst the heart still continues to beat for a time. Narcotics produce coma and insensibility by diminishing oxidation, through a counter-affinity which they possess for the oxygen. The following are the chief facts, which prove that narcotics act by diminishing oxidation in the system. The quantity of carbonic acid given off from the lungs is diminished during the influence of chloroform and ether. Bocker has found that the quantity of all the constituents of the urine was diminished by alcohol and some other narcotics. The temperature of the body, which always bears a direct relation to the consumption of oxygen in the system, is lowered during the insensibility caused by narcotics. Narcotics have most of them the power of preventing oxidation out of the body. Putrefaction is a process of oxidation in its commencement; and nearly all narcotics are antiseptics, their antiseptic power usually bearing a direct relation to their power as narcotics. The vapors of volatile narcotics also have the property of preventing that kind of oxidation which constitutes ordinary combustion. Some parts of the nervous system seem to have a greater affinity for oxygen than others, as they are able to perform their functions with a less amount of that gas. It is on this account that patients are able to exist in a state of coma and insensibility without dying. In privation of air, and also under the influence of narcotics, the functions of the cerebral hemispheres, and of the nerves of common sensation, are first suspended, coma and insensibility being induced, whilst the respiratory movements and the action of the heart continue. By further privation of air the respiratory movements ceased, from the functions of the medulla oblongata and the nerves of respiration being suspended, whilst the heart continued to act; showing that the ganglionic system of nerves continue to perform their functions. Under the influence of narcotics, also, the action of the heart usually survived that of the muscles of respiration, when these agents were not very rapidly introduced into the circulation. The circulation of the blood is of course necessary to convey oxygen to any part of the body; and it is by the interruption of the circulation in the brain that the diminution of oxidation was produced which caused the coma of apoplexy and epilepsy. The symptoms of apoplexy arise sometimes from extreme congestion, and sometimes from anæmia of the brain, but in either case the circulation is much interrupted; whilst, in effusion, the yielding coats of the vessels were the first to feel the pressure.

ART. 18.—*Case of involuntary tendency to fall immediately forwards.*

BY DR. PAGET, F.R.C.P.

(Medical Times and Gazette, Feb. 24, 1855.)

There can be no hesitation in referring the peculiar symptom which was here observed to disease of the crura cerebri, for none of the other morbid appearances in the brain had anything distinctive; and hence the value of the case for cases in which such a symptom has been connected with well-defined local disease are very rare. How the disease operated, however, is not easy to say. Dr. Paget thinks rightly that the experiments upon the brain of the inferior animals do not shed much light upon the subject; and he is rather disposed to seek for the explanation in the phenomena of paralysis agitans. "It may be remarked," he says, "that a symptom resembling the peculiar tendency to fall forwards is not unfrequently manifested in paralysis agitans. In this disease, as is well known, the patient has generally a tendency to lean forwards; and, to save himself from falling, is under the necessity of walking on his toes, with short, quick steps. In an advanced stage of the disease, the tendency to fall becomes almost as strongly manifested as in the case I have narrated; for the patient in walking would actually fall forwards on his face, unless supported. As the pathology of paralysis agitans is so obscure, it would be worth while, in case of an opportunity, to examine the state of the crura cerebri."

Dr. Paget afterwards proceeds to make some natural comments upon the functions of the cerebellum:—

"The peculiar circumstances of the case suggest some reflections in regard to the function of the cerebellum. From the well-known experiments of Flourens, the conclusion has been drawn, that the chief or sole function of this organ is to regulate and co-ordinate the muscular movements for the accomplishment of definite ends; and this seems no more than a fair inference from the facts. But a case like the present indicates that we must stop short of regarding the cerebellum alone as constituting the organ of co-ordination of movements. If the cerebellum, by itself, and independently of the cerebrum, had such a power of co-ordination, the movements would be regular and harmonious so long as the cerebellum and its transverse commissure, and its connections with the nerves through the medulla oblongata, remained entire and free from disease. Now in the present case, all these parts were healthy, and yet the guiding power was lost, as was evidenced, not merely in the tendency to fall forwards, but more unequivocally by the patient's inability to convey food directly to his mouth. This single instance seems sufficient to prove that the entire mechanism for the co-ordinate movement is not contained in the cerebellum alone, but that the proper performance of the function requires also an integrity of certain connections of the cerebrum.

"This view is in no respect at variance with Flourens' experiments. In removing the cerebella of animals by successive slices, he found that the animals were gradually deprived of the power of harmoniously combining their muscular movement for the accomplishment of definite ends. This proved no more than that the cerebellum is an essential part of the co-ordinating mechanism. It did not prove that organ to contain the entire mechanism, because the removal of a part of the apparatus might as effectually disturb or destroy the function of the whole, as the removal of one of the wheels of a watch might arrest the movement of its hands."

Commenting upon these remarks, in the next number of the journal from which this case is taken, Dr. Russell Reynolds says:—

"The truth of this proposition I have already endeavored to prove in a pamphlet upon vertigo, in which it was shown (by a reference to experimental and clinical observation) that the co-ordinating function of the cerebellum required, for its due performance, the guidance and direction of sensation; and that all the lesions (resulting from experiment or disease) which are known to induce vertiginous and other allied alterations of motility, may be resolved into solutions of functional continuity between the organ of co-ordination itself (the

cerebellum), and the sensory ganglia, the organs of special sense, or the general motor and sensory tracts."

Dr. Paget's case is as follows:—

W. P., æt. 41, was admitted into Addenbrooke's hospital, July 6th, 1853. He was a married man, living in a suburb of Cambridge, on the Newmarket Road, and following the occupation of brickmaker, working in the wet clay. He was tall, well-made, light-complexioned, and of respectable appearance. He was also temperate in his habits, according to his wife's report, from whom the following history of his illness was derived.

Six weeks before his admission, he returned from his work at noon, complaining of giddiness. No medical advice was sought for a fortnight, during which time he continued at his work, though still complaining of giddiness, and also dimness of sight. He then, at the urgent desire of his wife, consulted Mr. Deighton, by whose directions he desisted from his work, and was actively and judiciously treated. He remained, however, in about the same state for another fortnight, when, one forenoon, on his wife's return home, after a short absence, she found him reclining in a chair, perfectly insensible, with his mouth drawn to one side, and with his left limbs rigid and immovable. Mr. Deighton bled him largely from the arm, but without immediate relief; and the coma continued until 6 o'clock the next morning, when it passed off, and in five or six hours afterwards the tonic spasm of the left arm and leg was relaxed, and he recovered the use of them.

A fortnight after this, he was admitted to the hospital. His recovery from the fit had been far from complete. Though he could move his limbs freely, and seemed not deficient in strength, he could not go alone; in attempting it, he staggered, and fell forwards on his head. Whenever he got out of bed, he likewise fell precipitately forward. He could not feed himself, having difficulty in directing the food to his mouth, carrying it often to his cheek or chin instead of the mouth. He frequently passed his urine into the bed, apparently through inability to retain it when the need came (as it often did) suddenly and urgently. The same happened, and apparently from a similar cause, with the alvine evacuations. His memory was impaired, and he wept in an imbecile manner when reference was made to his miserable plight. Yet his understanding was clear for simple matters; he understood what I said to him, and, when I was questioning his wife on this point, he spontaneously made the remark, "I know very well, but I can't do." He said this with an effort, and then he wept in a helpless, half-imbecile manner. He groaned frequently. He kept his hand on his left temple; but said he had no pain. His pulse was 54; tongue furred; bowels rather torpid.

He was ordered to have middle diet; eight leeches to his right temple, and a grain of calomel every night and morning.

The following are the principal notes taken during the progress of the case:

July 8th.—A blister to be applied behind right ear.

9th.—Is not restless, as he was at his admission; he sleeps much and soundly.

10th.—Double vision; slight divergent strabismus.

11th.—Sometimes rambling in his mind. A seton to be inserted at the nucha. Iodide of potassium, three grains thrice a day.

15.—Strabismus more evident; left eye turned outwards; the left upper lip fallen, and cannot be raised. He is more restless, constantly desiring to get out of bed. When he does, he precipitates himself forward on his head. Speech indistinct; bowels confined.

R Hydrarg. Chlor., gr. ij;

Pil. Coloc. C., gr. vj. Statim.

16th.—Bowels well relieved. He is rather worse than better.

R Tinct. Cinchon., fl. 3j;

Liq. Hydrarg. Bichl., fl. ʒss;

Aque, fl. ʒvjss. Ter quotidie.

17th.—Not quite so restless.

21st.—The left eye is no longer divergent, and he can separate the lids rather

more widely. This morning I had him helped out of bed, in order to see him try to walk, some improvement having been reported. I find that he is quite unable to walk alone. He cannot direct his steps steadily. He staggers on either side, but his tendency to fall is chiefly forwards; he has a tendency to lean forwards, and fall on his face. Mind feebler, though he still seems to understand questions, and answers them intelligibly, when the answer required is short and easily pronounced. When he attempts longer words, they are indistinct and unintelligible. Pulse 56.

August 3d.—Augeatur dosis Liq. Hydr. Bichl., ad. fl. ʒj.

15th.—He no longer passes his evacuations into the bed. His power of walking is a little improved; the tendency to fall forward seems not quite so great. Slight gradual improvement in his mental condition, but he is inordinately emotional. The left eye is again divergently squinting, and its pupil dilated.

28th.—No further improvement in cerebral symptoms, though he is growing fatter and stronger, and his complexion has become that of health. The squint and dilatation of pupil of left eye, and the ptosis, are persistent. Pulse 65, strong; gums a little touched by the mercury. Omit Tinct. Cinchonæ.

Sept. 19.—General health excellent; he has grown fat and rosy. Speech not quite so indistinct, but no other improvement. Mind far from clear. He is self-willed, and difficult to manage; this, I am told, was not his character when in health.

Tartar emetic ointment to scalp. Continue the bichloride.

26th.—A full eruption of pustules on the scalp; the seton removed.

28th.—Yester-evening, a convulsive agitation of the right arm came on suddenly, and continued for quarter of an hour, with a choking sound in his throat; but without loss of consciousness. Numbness of the arm ever since; no headache; pulse 72; bowels regular.

Hirundines viij, ad tempus sinistrum applicentur. Hydr. Chlor. gr. v; Pil. Coloc. C. gr. x. Statim.

Oct. 2d.—Since the convulsion of his right arm, the fingers of that hand have shown a tendency to tonic extension. The spasm is noticeable during sleep, but is readily overcome by his volition when he is awake.

6th.—Yester-evening, another similar convulsion of the right arm. He has been worse for the last three days in intelligence, temper, and bodily power. He almost always passes his urine into the bed, and lies in it without manifesting any desire to avoid the uncleanness. He rubs the tartar emetic ointment off his head as soon as it has been applied. He sleeps heavily during the night, and not unfrequently during the day likewise. An issue to be made along sagittal suture.

Hydr. Chloridi, Pulv. Ant. C. aa. gr. ij. Bis quotidie.

Nov. 24th.—He pulled the peas out of the issue. He gradually became worse and weaker. The issue, therefore, was allowed to heal, and small doses of Tinct. Ferri Sesquichlor. were tried, instead of the calomel and antimony. Under this treatment he grew more torpid, and then all medicines were omitted, except purgatives, without which his bowels were not relieved.

He is now much weaker and thinner. He lies almost constantly in a state of stupor, never asking even for food; the nurse feeds him like an infant. When roused, he is sometimes troublesome or even disposed to violence. Passes urine and feces under him. The paralysis is persistent in parts supplied by the third nerve. The right arm is in a constant, moderately rigid spasm, the fingers being extended; but in the last few days it has been agitated four or five times, as it was on September 28th.

After Nov. 24th, he continued to grow thinner and weaker. He generally lay in a state of unconsciousness, but sometimes recognized those around him. Thrice he had a general stiffening—a tonic spasm—of the whole body; several times a convulsion of the right arm, and this arm and the right leg were generally in a state of rigidity. He gradually sank, and died on Dec. 23d.

On examination of the body, fourteen hours after death, the principal disease was found in the crura cerebri. On external inspection of the base of the brain, nothing abnormal could be seen except that the locus perforatus medius was

not situated symmetrically in the mid line, but almost wholly on the left of it. On section of the right crus cerebri, a mass of disease was discovered, occupying its central part. The mass commenced a little posterior to the junction of the crura, and extended obliquely forwards from the right into the left crus, being about an inch in length, and nearly half an inch in breadth and thickness. It came close to the surface at the origin of the left oculo-motor nerve; but elsewhere it was deeply seated, occupying in both crura the position of the locus niger, and encroaching on the nervous fibrils around it. There was a well-marked line of demarcation between the diseased mass and the surrounding nervous substance; the latter was plainly distinguishable from the former by color, and seemed healthy, except about the most anterior part of the mass, near the origin of the third nerve, where it was somewhat soft.

The diseased mass was not homogeneous; the greater part of it was of yellow color, and very firm consistence—firmer than a healthy medulla oblongata—and tough as well as firm; approaching, indeed, to the qualities of cartilage. The other part of the mass was of a dull grayish-red color, and as soft as the gray substance of the brain. The part of the brain out of which issued the left oculo-motor nerve was, as has been mentioned, involved in the disease; but the right nerve and its origin were quite free.

There was more fluid than is ordinarily found in the arachnoid cavity, and the two layers of this membrane were strongly adherent along the posterior half of the great longitudinal sinus. The lateral ventricles, also, were dilated with fluid, and the right choroid plexus contained a white body the size of a hemp-seed, and of the consistence of white cerebral matter. In other respects the brain seemed healthy; all parts of it were carefully examined. The other organs were free from disease.

Microscopic examination showed that the diseased mass in the crura cerebri was probably for the most part an inflammatory deposit, partially degenerate and withered. The firm, yellow mass was composed almost entirely of shrivelled imperfect cells, shrivelled nuclei, and molecular matter.

The tendency of the patient to fall forward on his face was noticed during the whole period of his stay in the hospital, and latterly it was more strongly manifested. During the earlier part of the time he could make two or three steps forward before falling; afterwards, the propensity to fall forwards showed itself before he could take a single step, and was constantly manifested whenever he got out of bed. Assistance and support were always needed to prevent him precipitating himself forwards.

ART. 19.—*Epilepsy treated by Cotyledon Umbilicus.*

By Dr. SIEVEKING, Assistant-Physician to St. Mary's Hospital.

(*Medical Times and Gazette*, Dec. 2, 1854.)

Dr. Sieveking thinks that the following cases hold out some encouragement to the further employment of this certainly innoxious remedy:

CASE 1.—Feb. 8, 1853.—Anna D., æt. 35, the wife of a painter, has been subject to epileptic fits for six years; sometimes with intervals of two or three months; lately they have become more frequent; and since yesterday week she has had six. The fits last two hours; she is insensible, foams at the mouth, struggles, and bites her tongue. The paroxysm is preceded by an aura in the shape of a choking sensation; she also feels the eyes growing dim a minute or two before the attack, but there is not sufficient time to take any precautions. The fits are generally worse during pregnancy; she is not so now; the tongue is bitten; there is no hereditary taint; no headache. The patient attributes her fits to anxiety. Pulse small.

R Liq. cotyl. umbil., ʒj., ter die.,

continued to Feb. 15, with one slight fit, which only lasted ten minutes.

The cotyledon was persevered in, with an occasional colocynth pill, and a little cough medicine, to the 29th of March, only one fit having taken place during that period. On the 6th she was discharged, but the cure was not

permanent; for, on the 19th of April, 1853, she returned, stating that the fits had returned since the previous week, and that seven paroxysms had occurred since.

The liq. cotyl. umb. was again ordered in the same dose.

May 3.—One fit since last visit. Pergat.

20th.—No fit for a fortnight. Pergat.

June 11.—One fit since last visit. Pergat.

July 5.—One fit in the night, the week before last, from excitement; none since. Electuar. ferri $\mathfrak{z}\mathfrak{j}$, ter die.

12th.—Pergat.

25th.—One fit since last visit.

R Nit. arg. gr. ss.;
Extr. gent., gr. iv.;
Pil. ter die sumenda.

Aug. 2.—Had two fits during the last visit, lasting a short time, and a slight fit last night. Per. pil.

16th.—Has had two fits. Rep. Liq. Cotyled. Umbil. $\mathfrak{z}\mathfrak{j}$, ter. die.

25th.—No fits. Pergat.

Sept. 23.—One fit since Aug. 25. Pergat.

After this there was no return of fits during the whole period she continued to take the medicine; she also lost what she called the slight attacks—brief, momentary fits of vertigo and semi-unconsciousness, and was discharged, cured, on Nov. 18th. The cure, however, again, was not permanent; and the last notes of the case, I regret to say, appear to show that the cotyledon had lost whatever efficacy it may previously have possessed. She returned in Jan., 1854, after a free interval of three months. She was now pregnant, and continued to have the fits up to the period of delivery, without relief from the cotyledon.

CASE 2.—Aug. 2, 1853.—Thomas C., æt. 44 , a widower and messenger, has for three days past been subject to dizziness; three days ago there was loss of consciousness, and paralysis of the hands for a quarter of an hour, of which there is now no trace. There is pain in the forehead; pulse 84; tongue furred. On Sept. 3 he had a fit, in which he lost his senses for about half an hour. Two fits occurred again between August 19 and September 23; another on September 25, lasting ten minutes. The treatment up to this time consisted mainly in counter-irritation and purging, the symptoms being regarded as indicating a congestive, if not inflammatory condition of the brain.

Oct. 7th.—Last Sunday (five days ago) his hand became pale and "drawn;" there was a sensation passing up to the head, and he then fell down in a fit, and remained unconscious for about ten minutes. The same symptoms have occurred once a week. He was recommended to apply a ligature round the arm, and tighten it as soon as he feels the commencement of the aura, and take liq. cotyled. umb. $\mathfrak{z}\mathfrak{j}$, ter. die.

Oct. 14th.—States that he has derived a great deal of good from the last medicine. Pergat.

21st.—Has a sort of cramp in his hands when he wakes up in the morning, with a "tapping" on the head. Pergat.

28th.—Can't get rid of the ticking in the head; complains of nothing else, except a slight increase of deafness. Says the cotyledon umbilicus acts as a diuretic. Rep. Cotyled. Umbilicus, Empl. Vesicat. Auricul.

Nov. 11th.—No fit had recurred since the first employment of the cotyledon umbilicus. I have not seen this patient since.

CASE 3.—This case might have seemed a peculiarly favorable case for the employment of the cotyledon umbilicus, from the apparent absence of all complications; but it failed, like the various other remedies which were employed, in effecting any permanent impression. It was that of an intelligent lad, æt. 17 , who, for three years before coming under treatment, had been subject to fits, occurring on an average once or twice a month. There was no hereditary or other taint traceable: masturbation was absolutely denied by the father, who had closely watched his son, and the former attributed the malady solely to over-

reading. The cotyledon was given alone, or with taraxacum, from October 18 to November 29; and although the headache of which he complained was relieved by a seton, the monthly fits were not postponed, and have of late even become more numerous.

CASE 4 was one that would be at once pronounced hopeless as regards the efficacy of any drug. The patient was a porter, æt. 80, who had been subject to epileptic fits from his infancy, whose father was paralytic and brother epileptic; they were preceded by a sense of his "head going round," and occurred once or twice monthly; and, during the last twelve months, he had also been affected with choreic movements of the left arm. He took the extract of the cotyledon, first, gr. xv; afterwards, gr. xxx, three times a-day, while under treatment,—viz. from Feb. 7, 1854, to April 4, with occasional purges. During that period he had four fits.

CASE 5.—March 14, 1853.—W. L., a lad, æt. 15, of a scrofulous habit; had no diseases until the appearance of the fits, to which he has been subject about a year and a half. The fits commence with a scream, and the unconsciousness sometimes lasts two hours. They are followed by frontal headache. He has not bitten his tongue. The pulse is 80, strong; the bowels open; there are no worms; he passes much urine before the fits; he now has five or six fits daily. He never had a blow on the head as a child. Masturbation denied. Ext. cotyled. umbil. gr. xv, ter. die. Mist. magn. et rhei, ʒj, alterna mane.

28th.—Has had no fit since last visit; feels much better; has no headache. Pergat usu mistura et pilul.

April 7.—Has had no return of fits till last night, when he had a "dreadful" fit, and another this morning. Wets his bed at night. The free interval was regarded by the mother as unusually long. Unfortunately, that was the last opportunity I had of seeing the boy; but the case, so far as it goes, may be used as evidence in favor of the cotyledon, the more so, as the patient's age and sex, as well as the duration of the illness, do not favor the assumption of any mere mental impression.

CASE 6.—In this case, a young clerk, æt. 17 years, epileptic fits had occurred, with gradually increasing frequency, for a year before he came under treatment. Gradually increasing doses of sulphate of zinc, attaining gr. x, effected what appeared to be a cure; but at the commencement of the treatment, the cotyledon was tried from April 21 to May 9, during which time he had two fits, which were said to have been less strong than the previous, though about the same rate of frequency.

CASE 7.—This case was one in which, not only from the ancient date of the disease, but the probability of centric disorganization (tubercle) of the brain, and the impoverished circumstances of the patient, treatment promised to be of little avail. He was a porter, æt. 18, who suffered from the first fit at the age of 5. The fits had remained in abeyance till within about eight months before coming under treatment. It was commenced with the nitrate of silver, but the fits became more frequent; the silver was therefore exchanged for the cotyledon, and the previous interval was restored, and intermissions subsequently were protracted longer than they had been before treatment. A severe attack of pleuritis prevented the further attendance of the patient, and he was lost sight of.

ART. 20.—*The effects of "Submarine Descent" upon the Nervous System.*

By DR. LITTLETON.

(*Assoc. Med. Journal*, Feb. 9, 1855.)

During the construction of the iron bridge over the river Tamar, at Salt-ash, in Cornwall, Dr. Littleton has had an opportunity of observing the injurious effects of working in deep water, and some of these are hitherto undescribed. He writes:—

"There are accounts given of several of the inconveniences which attend on the descent in a diving bell, at p. 492, No. 349, and p. 177, No. 368, of the 'Philosophical Transactions,' by Dr. Edm. Halley; at p. 377, No. 444, by Mr. Martin Triewald; and in Dr. Olinthus Gregory's translation of Abbé Haüy's

'Natural Philosophy,' vol. 1, p. 224. Such are the following: a painful sensation of pressure on the membrana tympani, which soon subsides, the ready communication by the Eustachian tube establishing an equilibrium of pressure on that part; spitting of blood; bleeding at the nose and ears; bloodshot state of the eyes; and the oppressive sensation attendant on a confined atmosphere, by which, if the means of constant renewal are not applied, life would be speedily destroyed.

"But no allusion is made to one source of danger, that has demanded most attention here; and which, from the suddenness of the attack, and apprehensions of fatal results attending it, more especially deserves notice.

"Some reasons for this omission is here supplied by the difference which the apparatus used here presents from a diving bell, and the less liability to danger which exists in the latter, from the *gradual* manner in which it is lowered and raised, and the consequently slow increase and diminution of pressure to which its inmates are subjected. Were this, which is so rightly insisted on by Dr. Halley, not observed, the same consequences would follow the rapid drawing up of the bell to the surface of the water as attend the working in this cylinder, and from the same cause, *the sudden removal of pressure.*

"Considering the effects produced on some few by this change, from a pressure of three and a half atmospheres (the depth at high spring tide being eighty-five feet) to the normal pressure of fifteen pounds, it is a matter of surprise that more do not suffer them. There have not occurred, so far as I am aware, more than half a dozen severe cases, in a work which has occupied daily twenty-five men over a period of many months.

"In the severe forms of the attack, the man is taken, within a few minutes after coming out of the cylinder, somewhat as in an apoplectic seizure, with a loss of power, preceded by pains, in the lower limbs (paraplegia), as I have seen in two cases, or of one half of the body (hemiplegia); another, the only one I have seen so affected, was wholly unconscious, remaining in that state many hours. In those who escape with less injury, their sufferings are in some instances very severe, from pains in the limbs and joints; and few, if any, have wholly escaped these effects at some time or other during the progress of the work."

ART. 21.—*On Ulceration of the Frænum of the Tongue in Hooping Cough.*

By M. GAMBERINI.

(*Archiv. Gén. de Méd.*, Feb. 1855.)

M. Gamberini tells us that he has looked for small ulcers in this position in all the cases of hooping-cough which have fallen under his care since 1844, and that he has generally succeeded in finding them, particularly in the more severe cases. The ulcers are seldom round, but they are usually elongated in a transverse direction, as if the frænum had been torn across. Sometimes the frænum is not implicated. The ulcers are never preceded by vesicles, but they begin as ulcers. The explanation which M. Gamberini has to offer is, that they are produced mechanically by the forcible protrusion of the tongue against the teeth; and he says, that where the teeth are irregular, and one tooth projects more than another, the ulcer is apt to correspond to the position of the projecting tooth. He says, also, that ulcers were not met with before the appearance of the teeth. M. Gamberini, however, has not been able to detect these ulcers in other cases of spasmodic cough.

The presence of these ulcers in hooping-cough has been previously noticed by two or three observers.

ART. 22.—*New method of treating Neuralgia by the direct application of Opiates to the painful parts.* By Dr. ALEXANDER WOOD.

(*Edin. Medical and Surgical Journal*, April, 1855.)

Dr. Wood has been led to introduce solution of morphia and Battley's Sedative Solution into the cellular tissue, as near as possible to the painful part of the affected nerve, by means of the small perforating syringe which is used for in-

jecting aneurisms with perchloride of iron; and he now narrates nine cases in which he has employed this mode of treatment, in all with perfect safety, in some with complete, in others with partial, success. He introduces the solution, we repeat, as near as possible to the painful part of the affected nerve, where, as M. Valleix has pointed out, there is usually more or less tenderness on pressure, even in the interval between the paroxysms of pain. This he insists upon as an important point of practice. Indeed, before adopting the treatment in question, Dr. Wood had carried out the treatment recommended by M. Valleix in these cases, which treatment consists in the application of a succession of blisters on those points of the nerve which are tender on pressure, sometimes applying morphia endermically; and he had found much benefit from the practice.

The cases related are as follows:

CASE 1.—Miss —, an old lady, who had long labored under gastric and nervous symptoms, had suffered severely for four days from cervico-brachial neuralgia. This lady had the idiosyncrasy of not being able to take opium. Of this she had warned me many years before, when she first came under my care, and I consequently never prescribed it for her; however, once, when she was seen with me by the late Dr. J. H. Davidson, he, disbelieving her former experience, prescribed opium, with the effect of bringing on a severe fainting fit.

The narration of her case may date from November 26th. She had not been able to sleep for the three previous nights from the violence of the neuralgic pain, and was quite exhausted with severe suffering. The usual internal remedies, with the exception of opium, had been tried, but without the least alleviation of her agony. Under these circumstances, I resolved to put in practice the plan which I had so long resolved in my mind.

Accordingly, on November 28th, I visited her at 10 P. M. to give the opiate the benefit of the night. Having ascertained that the most tender spot was the post clavicular point of Valleix, I inserted the syringe within the angle formed by the clavicle and acromion, and injected twenty drops of a solution of muriate of morphia, of a strength about double that of the official preparation.

In about ten minutes after the withdrawal of the syringe the patient began to complain of giddiness and confusion of ideas; in half an hour the pain had subsided, and I left her in the anticipation of a refreshing sleep.

I visited her again about 11 A. M. on the 29th; was a little annoyed to find that she had never awakened; the breathing also was somewhat deep, and she was roused with difficulty. Under the use of somewhat energetic stimuli, however, these symptoms disappeared, and from that time to this the neuralgia has not returned.

CASE 2.—Mrs. —, æt. 30, of a gouty family, four years married, no family, short, and plump habit, very pale, menstruation scanty and painful, countenance anxious, urine high-colored, suffers much from flatulence and indigestion, tongue loaded, pulse 98.

After exposure to cold and damp, was seized with shivering and pain in the loins on the 9th December, 1853. I saw her on the 13th. The pain in the back had then subsided, but the whole region of the left hip was tender, a distinct painful point was felt near the posterior superior spinous process of the ilium, and another farther down, about the middle of the thigh.

Twelve leeches were directed to be applied as nearly as possible in the course of the sciatic nerve, their use to be assiduously followed by that of warm fomentations, and one of the following powders to be taken sixth hour:

R. Pulv. Doveri, gr. v;
Pulv. Colchici, gr. iv;
Hydrarg. c. Creta, gr. ij.
M. ft. pulv.

Next day (14th December) she was considerably relieved; had enjoyed a short but refreshing sleep; the bowels had acted three times freely, the motions being very dark and offensive; thought herself much weakened by the bleeding and purging; directed to continue the powders.

15th.—Tongue cleaner, gums swollen and spongy, coppery taste in mouth, tenderness of hip gone, the pain otherwise much the same as on the preceding day; feels sleepless and uncomfortable; bowels have not again acted.

Stop the powders; take two turpentine capsules three times a day; drink plentifully of linseed tea with gum dissolved in it.

16th.—Feels very uncomfortable, the turpentine has produced severe dysuria, pulse 104, tongue coated, the pain in the hip has not returned, but the pains are more severe and lancinating in the middle of the thigh and round the head of the fibula.

The syringe was introduced at the painful spot in the middle of the thigh, and ten drops of Battley's sedative solution were injected without any perceptible effect but that of slight smarting at the seat of the puncture. Two hours afterwards the pain ceased, and the patient fell into a deep sleep, from which she woke entirely free from pain in the thigh or leg, but suffering slightly in the region of the malleolus externus.

18th.—The pain in the malleolus is very severe, and is much aggravated by pressure; the pain in the hip and thigh is entirely gone.

The injection repeated in the malleolar region. This operation was followed by no perceptible effect; but in about four hours the pain began to abate, and ceased altogether in about eight hours from the injection.

The state of the patient's general health required some attention; she is now much better, and her sufferings at the menstrual period are diminished, but she has had two slight returns of the sciatica, for which, at her own request, she has been treated by the opiate injections.

CASE 3.—Mrs. —, æt. about 50, widow, plethoric habit, hysterical temperament, has suffered since the cessation of the menstrual flux about ten years ago, from various anomalous symptoms, of a nervous kind, indicating great spinal irritation. Her liver is enlarged, and her heart is often functionally disordered. She has had severe attacks at different times of visceralgia, and has often suffered from neuralgia, chiefly of the dorso-intercostal and lumbo-abdominal varieties. Her very full habit, as also the cause from which these symptoms obviously arose, coupled with the evidence of cerebral congestion, with which her attacks were frequently accompanied, as also the fact of her pulse being these times full and firm, her skin hot, and her urine high-colored, had led me to treat them by cupping, purging, antimonials, and salines. Opiates had no effect in alleviating her sufferings, and belladonna and aconite affected too powerfully her nervous system, without abating her suffering.

I first tried the syringe with her on the 19th of April, 1854, when she was suffering from a severe attack of lumbo-abdominal neuralgia.

The syringe was inserted in the *lumbar point*, a little to the outside of the vertebræ, and twenty-five drops of Battley's solution were injected.

She had an easier night, and the pain, though somewhat better next morning, was by no means removed, and the following day it returned with such severity that her former treatment had to be resorted to with decided relief. She has certainly suffered less since the operation.

CASE 4.—A married female, æt. 23, in the lower rank of life, consulted me May 2d, 1854. Had suffered three months previously from a miscarriage which had weakened her much; her countenance is exsanguine, lips nearly colorless, tongue and gums white. A loud bruit is audible over the heart and in the carotids. Has also had a great deal of mental distress.

About three weeks ago, came from the country on the outside of a coach, and sat on a very damp cushion. Next day felt as if one leg was longer than the other; she had much pain in the lower part of the abdomen, in which she thought she felt a large painful ball. Pressure on the spinous processes of her dorsal vertebræ gives no pain; but a painful spot is distinctly to be detected a little to the left side. Os uteri open and flabby, very tender on pressure; surface velvety, much mucous discharge.

The following medicine was ordered, with nourishing food:—

R Citratis Ferri, ʒij;
Syrupi, ʒss;
Aquæ Cassiæ, ʒvss.
M. Sumat coch. amp tar in dies.

May 16th.—Somewhat improved in appearance, pain not abated; 25 drops of Battley's solution were injected into the painful point. About an hour afterwards was seized with violent vomiting, with shivering and severe constitutional disturbance; pain not abated.

May 17th.—Vomiting has ceased, but returns with every attempt to swallow, pain much worse, no sleep, tongue loaded, bowels costive. Ordered to use ice freely, and to take a drop of Fleming's tincture of aconite every third hour, for four times.

May 18th.—Stomach much better, but the pain in the back is not abated. Ordered friction with the Tinctura Saponis c. Opio.

May 19th.—Pain, which was easier during the day, became much more severe at night, and she had an opiate by the advice of a friend. Severe vomiting followed its use, and it had no effect either in allaying the pain or in procuring sleep.

I recommended her to persevere with the iron for some time, but have lost sight of her.

CASE 5.—Mr. —, after much exposure to wet, consulted me on the 4th June, 1854, on account of a severe attack of sciatica. I prescribed a smart dose of calomel and rhubarb, to be followed by an antimonial mixture, and on the evening of the following day, injected 20 drops of Battley's sedative solution. Four hours afterwards he fell into a deep sleep, and wakened free from pain.

CASE 6.—Miss —, æt. 50, very stout, consulted me, some years ago, about a uterine affection, accompanied with severe lumbo-abdominal neuralgia. The pain she suffered was great, and the lameness it occasioned, entirely precluded the possibility of walking. I directed attention, in the first instance, to the uterine symptoms, hoping that, on their removal, the neuralgia would disappear spontaneously. In this, however, I was disappointed. Great benefit undoubtedly followed the relief of the internal disorder, and the lameness diminished perceptibly; still the pain evinced little or no disposition to abate. On the 2d June, 1854, I inserted thirty drops of Battley's solution. Severe vomiting followed, and the pain was entirely diminished.

From that date, I directed my attention chiefly to the constitutional treatment, until the increased severity of the pain drew my attention to it. I injected thirty drops of Battley on the left side on the 13th December, 1854.

Dec. 14th.—Pain on left side nearly gone; that on right very bad.

16th.—Repeat the injection on the right side.

17th.—Pain much relieved.

I saw this lady again on the 29th December. The pain was much easier, but she still continued lame, and the pain was apt to increase after any exertion.

CASE 7.—A gardener, advanced in life after exposure to cold and wet, was seized, on the 19th November, with severe lumbago. This had yielded by the 2d December to the usual treatment; but there remained after its disappearance symptoms of that very rare form of neuralgia described by Cotugno and subsequently by Chassier, and denominated by Valleix crural neuralgia.

He says he has lost the power of his limbs, though this is obviously not the case.

There is a painful point in the loins, another still more marked in the groin, a third at the head of the fibula, a fourth on the dorsum of the foot.

Dec. 12.—15 drops of Battley's solution were injected into the painful point on the loins. Next day the patient reported that he had felt no peculiar effect except that the pain was entirely gone from every point but the knee.

CASE 8.—Mrs. —, æt. about 80, has been suffering for some time from severe pain in the chest, cough, with mucous expectoration, which, together with the cough, have prevented her from sleeping for some nights. She is extremely deaf, so that it is not easy to make out her symptoms. I visited her first on the 12th December, 1854. The bronchitic symptoms were then so severe that I directed attention exclusively to them. I need not detail the treatment, which has no bearing on the matter on hand. On the 21st, I found the cough nearly gone, but she was still sleepless from the pain of the back, which I then for the first time examined. A painful spot was soon pointed out by the patient herself, seated near the trochanter. The integuments here were deeply

reamed and scarred, the result, she informed me, of deep incisions made when she labored under what she called "white swelled leg" (phlegmasia dolens, I presume), 54 years before. Into this point I injected 30 drops of Battley. Next day (23 Dec.), when I visited her, she told me she had enjoyed a capital sleep: "but what was that you gave me?" she added; "I saw the most glorious visions all night." Since then the lancinating pain has ceased, though what she describes as a dull stounding pain remains.

CASE 9.—Miss —, æt. about 30. About twelve years ago, while travelling on the continent, suffered from severe influenza; while scarcely convalescent, by the breaking down of a bridge, was precipitated into a river, and had to sit some hours in a carriage with wet clothes. After this suffered from constant aching in the back, which rendered the supine position essential. Some amelioration of this took place under medical treatment. Her menstruation became scanty and painful; for this she consulted Dr. Simpson, and was relieved by his treatment. Since then has had attacks of pain in back at intervals.

Last spring, pain in back became severe, extending down to knee: was recommended to take aconite, which she found to give relief. Her left side is constantly cold. When in the country, her medical attendant scarified the back and rubbed in morphia. This was done nineteen times, and she obtained some relief, but the operation was very painful.

Dec. 24th.—The pain was brought on by exertion to-day, but is not very severe. 25 drops were injected. She passed a very restless, uneasy night, with much vomiting: pain in back gone.

26th.—Slight return of pain: but on the whole better. I have heard since that this young lady's health is permanently improved.

Besides these cases, Dr. Wood relates two others in which the same treatment was tried by Dr. Wright, one successful, the other not: but in the last it must be confessed that the practice had not a fair trial.

This mode of treatment appears, indeed, to have several advantages. Quickness of action is one of these; and this is a great recommendation, for everyone knows how long we often have to wait before a narcotic, given by the stomach, begins to act. The rapidity with which the narcotic acts under these circumstances, not only upon the nerve locally, but upon the brain, causing in some instances, the patient to feel as if drunk in a very few moments, points (in Dr. Wood's opinion) to this as an advantageous mode of giving narcotics in some other maladies than neuralgia, and even of giving other remedies than narcotics.

(B) CONCERNING THE RESPIRATORY SYSTEM.

ART. 23.—*The topical application of the Nitrate of Silver to the Larynx and Trachea in Croup.* By Dr. CHAPMAN.

(*New York Journal of Medicine*, March and July, 1854.)

Dr. Chapman relates ten cases in illustration of this mode of treatment, and then makes these comments:

"Setting aside spasmodic croup, arising from causes sympathetic, all assuming a fatal character naturally divide themselves into three classes—membranous, catarrhal, and diphtheritic. The last differs from the first in quickly commencing by an exudation in the mouth or face, which by continuing extends into the respiratory tubes. In none of the ten cases reported by me was the diphtheritic exudation perceptible, though my attention most particularly directed to discover it if present. All were either of membranous or catarrhal character; two of them had perfectly organized false brane and recovered. Of four cases which, from the want of secretion caustic was used, and the appearance of the matters subsequently were judged to be of the membranous variety in the initiatory stage, three recovered, and one died. Of the two catarrhal cases, which were near bound at the time caustic was resorted to, both died. One chronic case

congestion of the mucous membrane of the larynx, was cured. One case, probably membranous, which recovered from the croup, died two weeks afterwards from marasmus.

"Of these ten cases (including those previously reported), seven recovered from the disease and three died. The duration of the disease before the caustic was resorted to, was, respectively 72, 60, 36, 48, and 60 hours, and 4½, 6, 7, 5 days, and 18 months. Faithful and thorough medication was employed in all excepting one, before resorting to the caustic, yet without avail. Not one of the nine acute cases, in my estimation, could, in the desperate strait to which they were reduced, have recovered by any other known method of procedure, excepting from the doubtful and unsatisfactory operation of tracheotomy, which in hands the most skilful and experienced yields results far from being favorable to its repetition. We can readily imagine a case in which suffocation might be imminent from an obstruction localized in the larynx and upper portions of the trachea, where tracheotomy holds out a solitary and perhaps the only hope for the patient. We have no time to wait for the remedial powers of caustic, which from its very nature requires an appreciable interval—very likely five or six hours—before its peculiar powers are displayed in subduing the inflammation or disorganizing the pseudo-membrane that may have been secreted. Unless greatly deceived, even such a case would not require the operation were the caustic thoroughly and efficiently employed at an earlier date, whilst the obstruction is not too serious, and the powers of life are still strong. We sadly need some remedy, more general and universal in its applicability than tracheotomy, to which we may appeal with confidence in all cases hastening on to a fatal issue, after active and efficient medication has been resorted to without producing a favorable crisis. Such a remedy, I confidently trust, we shall find in the nitrate of silver when its powers have been more generally tested, and its application to the seat of the disease becomes familiarized by frequent and careful practice. I do not despair of seeing it used with as great an assurance of success as in those other kindred inflammations of the fauces, of whatever nature or kind, in which we cauterize so confidently, and with such beneficial effects. Even in diphtheritic pharyngitis, between which and the false membrane of tracheitis there is such a close resemblance, we confidently appeal to this remedy, almost certain that the inflammation will subside, and the exudation be detached in shreds and disorganized portions before the almost magical power of this potent article. Its efficacy when thus applied can be observed by the eye. I trust that it will be found that the mucous membrane of the larynx and trachea, of a similar organization, will be equally amenable to the treatment by cauterization as a like disease in the pharynx, whether the disease consists of inflammation or has resulted, in addition, in a lymphatic exudation of pseudo-membrane. Analogy bears me out in asserting, what my experience demonstrates, to my own satisfaction at least, that similar tissues, affected with similar diseases, require for their cure the same remedial agent, unless there are good reasons why its powers would be less efficacious in the given case."

The three following cases may serve as examples of the rest:

CASE 2.—May 5th, 1854.—Child of Mr. S., Amity St., æt. 18 months, suffering from an attack of the croup for six days. For the last two days it had been under the careful and judicious management of Dr. Drake, who had employed all the usual means of combating the disease—viz., antimony in divided doses, mercurials, warm baths, cathartics, &c., but all without avail. An antimonial emetic failed to operate, though continued until three grains had been given. The patient presented the following symptoms:—Laborious inspiration, with a permanent constriction of the calibre of the larynx, and attended with a dry whistling sound, as though the mucous membrane was devoid of moisture; no violent exacerbation; voice muffled, and nearly suppressed; cough dry, ringing, and sonorous; pulse full and strong; skin disposed to perspiration; chest not implicated. As Dr. Drake had tried the approved means of treatment assiduously, without producing any beneficial affect, we resolved to resort to the caustic without further delay. Emesis occurred, with the discharge of a substance gelatinous and albuminous in appearance, mixed with shreds that had the semblance

of false membrane in the formative stage. Ordered Hydrarg. Sub. Mur., gr. iss, Cretæ ppt., gr. viij. M. ft. chart. No. viij, S. one every third hour; also one sixteenth of a grain of antimony every second hour, for the purpose of producing a nauseating effect.

6th.—Laryngeal symptoms slightly improved. Reapplied caustic with an effect similar to the day previous, directed a cathartic, and omitted the mercurial. Ordered Syr. Senegæ, ℥ij; Ipecac., ℥j, given to produce vomiting at first, afterwards in 3ss doses every hour.

7th.—Improved. Continue treatment.

9th.—Cured.

CASE 4.—March 27th, 1854.—A child of Mr. G., Walcott Street, æt. 20 months, laboring under an attack of croup for five days, had been treated by domestic prescription until the day previous, when Dr. Brooks, a well-known practitioner of this city, was called to attend it. About the same time Dr. Harris of Williamsburgh saw the case. They employed the usual means for combating the disease, but without producing any change in the unfavorable features of the case. In the evening an attempt was made to introduce caustic into the windpipe. On the morning of the fifth day the caustic was applied the second time. At 4 P.M., when I first saw the patient, it presented symptoms almost identical with the last case. There was a catarrhal condition, sub-inflammation of larynx, trachea, and bronchial tubes, which had attempted resolution by a profuse secretion of mucus. The child was in a half-somnolent, torpid condition, aroused with considerable difficulty, and breathing not only as if there were great constriction about the larynx, but much more rapidly than natural. The tracheitic symptoms, though the mucous secretion was very free, were of the most grave and serious character. Moist rhonchi were heard all over the chest; percussion clear. We applied caustic, as in the preceding cases, directed an expectorant of senega, squills, and carb. ammonia, and a blister four inches square to the chest.

28th.—The child died, at 9 A.M., of extensive inflammation of the mucous membrane.

CASE 5.—March, 1854.—Master W., from Massachusetts, a lad, æt. 10 years, consulted me on account of an affection of the larynx and trachea of eighteen months' duration, attended with a croupy cough. Hoarseness constant; subject to exacerbations from changes of the atmosphere; tenderness in the crico-thyroid space. I applied caustic on eight different occasions, with an interval of from four to six days. His symptoms constantly improved, and on the 1st of May he was discharged cured.

ART. 24.—On certain points connected with *Pneumonia*.

By Dr. ROUTH.

(*Medical Times and Gazette*, April 7, 1855.)

I. In Dr. Routh's opinion, pneumonia is an adynamic disease. It is the natural consequence of the thinning or impoverishing of the blood. He rests this opinion mainly on the experiments of Magendie; which show that, by injecting defibrinated blood, pus, or putrid matter, into the blood, pneumonia was almost invariably produced. The production of the fibrine, in the course of the disease, is a secondary result, due to increased respiration. The blood also is deficient in chlorides, the first effect of which is also to produce unusual fluidity of the blood, and general dropsy, as a consequence; and the second, to lead to a deposition of the fibrine, which, being increased in quantity, is no longer capable of being held in solution, both from the absence of the chlorides, and the alkaline phosphates, which derive their soda base from the chloride of sodium. The occurrence of pneumonia in cases of wounds, or after surgical operations, is explained by the absorption of putrid matters or pus, and the necessary fluidity of the blood. Lastly, the causes of pneumonia are statistically shown to be very frequently those which bring about fluidity of the blood. Pneumonia, also, is most fatal in proportion as it is of a low type. From these facts Dr. Routh concludes that the disease is essentially adynamic.

II. In regard to the diagnosis, Dr. Routh shows, from the Registrar

reports, that the disease called pneumonia is made to include a variety of other diseases of a totally different character. Taking the years 1840 to 1844, inclusive, for London, the deaths are, from pneumonia, one half in number those registered from phthisis, and eight times those from bronchitis; and for all England, for the years 1847 and 1848, they are nearly equal to those from phthisis, and twice as numerous as those from bronchitis. Capillary bronchitis is not even mentioned, a result altogether opposed to hospital experience.

Pneumonia was very often confounded with simple pulmonary congestion, capillary bronchitis, and a particular variety of pleuritis. Dr. Routh points out the differences of these three diseases, by the physical signs, general symptoms, and peculiar characteristics of the dyspnoea, cough, and expectoration, dwelling particularly on the so-called fine crepitation, upon which so much stress is laid in the present day. Some allusion is also made to œdema of the lungs, and pulmonary apoplexy.

In regard to the prognosis, Dr. Routh believed that, within favorable ages, the disease is generally curable by any prudent treatment, although more fatal, as a rule, in Great Britain, because more than 53 per cent. are generally complicated cases.

III. In regard to the theory of the treatment, bloodletting had been recommended, because—

1. It is said to diminish the amount of fibrine, but it has been shown by Andral, Gavaret, Simon, and others, that in pneumonia, rheumatism, peritonitis, &c., the fibrine is not diminished till after the *fourth* or *fifth* venesection; but even the advocates of bloodletting generally disapproved of such heroic venesections.

2. It was said to diminish the fever, and the severity of the general symptoms. Dr. Routh admitted this; but then it must be carried to great excess, and the secondary consequences, debility, and a long period of convalescence, were the results.

3. It was said to diminish the severity of the local symptoms. This was the exception, not the rule, and opposed the experience of Grisotte, Todd, Chomel, and Ragori; and Laennec even went so far as to say that, in intense pneumonia, it aggravated the symptoms. Bloodletting, perhaps, shortened the duration of the febrile excitement, but lengthened the convalescence. Dr. Routh therefore concludes, that the treatment by bloodletting is pathologically and physiologically unphilosophical.

ART. 25.—*The hot-douche to the spine in Typhoid Pneumonia.*

By Dr. JONES, of Petersburg, Va.

(*Montreal Monthly Journal*, March, 1855.)

This mode of practice is not recommended in all forms of pneumonia, but only in cases "in which there is a torpor in the superficial vessels, a tendency to collapse, and an urgent necessity for the production of immediate reaction." Perhaps, also, it is more applicable to colored than to colorless patients. Two cases are related in illustration.

CASE 1.—A strong, athletic negro, æt. 25 years, had been ill for nine days, with all the symptoms of well-marked typhoid pneumonia. His system was reduced by the injudicious use of purgatives and emetics. I found him in the following condition. He was lying on his back with his knees drawn up; skin cool and rough; countenance sunken, pulse low; disinclination to move, and evident symptoms of considerable cerebral disturbance; his tongue was loaded with a thick brownish fur, and slightly red and pointed; bowels sunken and tender, with a slow and occasional hurried respiration, interrupted frequently with cough, followed by expectoration of a muco-purulent appearance, which latter, I was informed by his master, had a few days previously been dark brown, and slightly bloody. There was evident flatness over both lungs, but the right lung seemed to be most involved. For several hours previous to my visit, blisters had been on the surface, without producing any vesication whatever, so entire

was the inactivity of the capillary circulation. Whilst in the above condition, the patient was placed on the floor on his face, and about five gallons of water, at a temperature so near the boiling-point as barely to allow the immersion of the hand, was thrown immediately on the spinal column, which seemed to arouse his sensibilities somewhat, as shown by an effort to cry out; he was well rubbed, and wrapped in blankets, and removed to bed. Fifty drops of laudanum, with a small quantity of thin starch, was thrown up the bowels by injection, and pressure applied to aid him in retaining it, which he did. In a short time he was asleep, and slept for two hours. During his repose, he seemed to breathe with more freedom, and, upon an examination of his pulse, there was evident improvement, and a very rapid approach to reaction took place. Nourishment was offered, which was taken, when very soon after he fell into a deep and quiet sleep.

I left him with directions to repeat the hot water in four hours, in case reaction was not complete. I also directed 10 grs. of Dover's powder, at bedtime, and nourishment during the night.

On my return the next morning, I found him in quite a comfortable condition, complaining only of slight soreness along the spine, and very anxious to take nourishment, which was given at proper intervals. With the exception of some quinine in small doses, this was all that was done for him, and in a few days he was entirely restored to health.

CASE 2.—A young negro woman, æt. 18, was taken with all the symptoms of pneumonia. When I was called in, she had been sick six days. She had been bled, blistered, and treated according to her condition, previously to my seeing her, with evident benefit, until the afternoon of the sixth day. Hot water was thrown on the spine; she reacted at once, and was put on the use of calomel, quinine, and Dover's powder, in proper proportions. It was not necessary to repeat the hot douche, and after a few days she convalesced rapidly.

I might proceed to relate many cases in proof of the efficacy of this method of treatment as an adjuvant to the remedies commonly employed in the cure of typhoid pneumonia. Nothing, in my hands, has been so effectual in re-establishing the capillary circulation as this powerful revulsive.

ART. 26.—*Cases of plastic Bronchitis.* By (1) Dr. FULLER, Assistant-Physician to St. George's Hospital; (2) Dr. THIERFELDER, of Leipsic; and (3) Dr. PEACOCK, Assistant-Physician to St. Thomas's Hospital.

1. (*Pathological Transactions*, vol. v. 1854.)

2. (*Archiv. G n rales de M d.*, Oct. 1854.)

3. (*Medical Times and Gazette*, Dec. 30, 1854.)

Three cases of this somewhat rare affection are here recorded. The second and third are also made the texts for elaborate memoirs on the subject, in which other cases are cited and commented upon, and to which we beg to refer any one of our readers who wishes to investigate the subject more fully. These memoirs, however, contain no special novelty which we need notice here, and we therefore leave the cases to tell their own tale.

1. *Dr. Fuller's case.*—The patient in this case was a widow, æt. 25, under Dr. Fuller's care at St. George's Hospital. She was well made, of average robustness, of somewhat dark complexion, and pale, but not unhealthy in appearance. She states that her habits are in every respect temperate and regular. Her parents both died at the age of 59, of cholera; her father was a healthy man, her mother had suffered during nearly twenty years from cough and occasional hæmoptysis. She had five sisters and one brother, of whom two sisters and one brother survive. Her other three sisters are reported to have died of consumption; two at the age of thirty, and one at the age of fifteen. The latter is reported to have expectorated fibrinous casts of the bronchial tubes for at least months before her death, and it is questionable whether she did really have consumption. As a child, this patient enjoyed excellent health, and up to present time she has not had measles, whooping-cough, or croup; at the fourteen, however, she was seized with ague, and about a twelvemonth afterwards began to suffer from cough and dyspnoea, accompanied by the ex-

ration of small pieces of plastic material. Not a winter has passed since that time without her experiencing a recurrence of these symptoms, which, during the last four years, have been of more than usual severity, and have not been confined to the winter months. The most severe attack she has undergone was last summer, when she was in St. George's Hospital, under the care of Dr. Page. The dyspnœa at that time was so severe, that it was for some time doubtful whether the attack might not prove fatal. The casts at that time expectorated were tubular, and of much larger size than those now exhibited. Some of them were four inches in length, and at their large extremity about the diameter of an ordinary cedar drawing-pencil. Dyspnœa was a more prominent symptom than fever. She remained in the hospital thirty-seven days, during the whole of which period she continued to expectorate these plastic casts in greater or less abundance. She came under Dr. Fuller's care on the 10th of last December, and then stated that she had continued to expectorate these masses at intervals ever since her discharge from the hospital. During the last week, however, the cough and dyspnœa had become much more urgent, and the day before she applied to Dr. Fuller, she had expectorated a plastic mass of considerable size. There was no pain in the chest, and little or no fever, but the dyspnœa was so urgent, as to produce complete blueness of the lips. She was ordered calomel, and opium, and salines, and alkalies, in full doses. In the course of three days she expectorated another large plastic cast, the getting rid of which afforded great relief, and she has been easier ever since. Lately, she has not had hæmoptysis; but on several occasions, during the extreme violence of the cough in her former attacks, she spat a small quantity of blood. She states, that in a warm room, and breathing warm dry air, she does not experience any inconvenience with the respiration; but that ever since her attack last summer, she cannot long expose herself to cold and damp, without incurring the penalty of an attack of dyspnœa, followed by expectoration of these fibrinous casts. The expectoration of the casts is usually preceded by incessant cough for a period of about three days.

2. *Dr. Thierfelder's case.*—This case occurred in St. James's Hospital, at Leipsic, the patient (Christian Kreutzberg, a hotel-waiter) being forty-four years of age, and unmarried. He began to cough and spit in 1851. Two or three weeks afterwards, his expectoration became more difficult, and from this time he has continued to void solid masses, of a bloody color, and sometimes as long as his thumb. His health, however, suffered but slightly; he has continued to follow his occupation of a waiter, only feeling some little difficulty of breathing when he had to mount several flights of stairs at once. He was admitted into the hospital in June, 1851. At this time he was in good condition, and sufficiently strong. The thorax was large, and well developed, but slightly protuberant on the right side. The respiratory movements were 24 in the minute, and somewhat fettered, the sterno-cleido-mastoid muscles, which were largely developed, taking a larger share in them than they ought to do. The right side, also, moved somewhat less freely than the left. On percussing, the liver was found to encroach very considerably on the right side, and the sound elicited on this side was "*plus court*" than on the other. On the right side, in front, the respiratory murmur was louder than on the other, and accompanied with slight and indeterminate râles below the level of the third rib; on the same side, behind, the respiratory murmur was less distinct, and there were whistling and sonorous sounds. The cough was not frequent, but violent, happening generally at night; and in the paroxysm, the patient, after much effort, rejected considerable quantities of serum, and frequently four or five fibrinous bronchial casts.

For two months after his admission, the patient continued in very much the same state, except that his general health suffered sensibly, in spite of all efforts to the contrary. There was little or no change in the expectoration, but there was considerable fluctuation in the auscultatory phenomena.

Matters went on in this way until the 12th of August, when, in the night, and without appreciable cause, he was seized with violent cough and profuse expectoration. On the day following there was considerable dyspnœa, the respirations being 36, and the pulse 104; the face was cyanosed, and the cough convulsive. In a few hours these symptoms subsided, under the use of emetics and antimo-

nials. On the 15th, and again on the 18th, the patient relapsed into the same state in which he was in on the 12th, again to get out of it by the same means.

On the 19th he was put under the influence of mercury, and under this treatment the expectoration was sensibly diminished, the clots becoming softer and smaller, as well as fewer in number. The gums became affected on the 25th, and the mercury was discontinued. The improvement was only temporary, and in four days the patient was in the same state as when admitted into the hospital.

After this, the iodide of potassium was again tried, and with some apparent benefit; but no material alleviation had taken place in the symptoms when the patient was finally discharged, two months later.

The more perfect clots were much branched, and clearly corresponded to the ramifications of the bronchial tube; and their composition was like that of the false membrane which is voided in croup.

3. *Dr. Peacock's case.*—William Chambers, æt. 11, was admitted an out-patient of St. Thomas's Hospital, on March 17th, 1854.

His mother stated that he had always been delicate, and that, when about six years of age, he had an attack of influenza, and had since that time been subject to cough and expectoration. His grandfather died of consumption, and his father, now 34 years of age, labors under symptoms of phthisis, and has had three attacks of hæmoptysis. His mother and her family are healthy. Of his brothers and sisters two out of six are dead, one having died of croup, the other of consumption; the three still living are healthy.

After the attack of influenza, his mother observed that he occasionally spat up pieces of skin, which spread out when put into water. He continued to expectorate this kind of matter for five or six months. After this attack, he remained well till three years ago, when, after exposure to cold, he was again taken ill, and at the end of about a month began to spit up pieces of skin; but, after six months, he recovered his usual state of health.

In May, 1853, he had another similar illness, in which he expectorated solid matter, and continued to do so till the June following, when he became tolerably well, though still suffering at intervals from cough, debility, and pain in the limbs and head.

He has now had the peculiar expectoration since Christmas. He took cold at the end of the year, and had profuse epistaxis. The masses are generally brought up after a hard ringing cough, which comes on in paroxysms, and threatens suffocation; but sometimes they are expelled with very little effort. Usually only one portion is spat up at a time, but the expectoration is sometimes repeated every hour or two hours. The paroxysms of coughing are caused by any exertion or excitement, and are relieved by the expulsion of the membranes. His mother states that the bodies expectorated have always the form of a trunk and branches, and they are generally an inch and a half long. They have a white color, and he has never brought up any blood with them. His voice has never been affected, but he is habitually short-breathed.

He was directed to take an expectorant and anodyne mixture, containing small doses of the potassio-tartrate of antimony, ipecacuanha wine, and compound tincture of camphor, with an alterative of hydrarg. c. cretâ, soda, and rhubarb.

The following notes were taken on the 20th of March. His appearance is unhealthy; his cheeks and lips are livid, and the latter tumid; his hands are also livid, and the nails slightly incurvated. He is thin, and the skin dry and scurfy. The chest is narrow and contracted, and the veins in front are very conspicuous. It is altogether less resonant than natural, and the deficiency is more marked at the left apex posteriorly than elsewhere. The respiration is puerile in front, but is feeble in the dorsal and lateral regions, and is there attended with a slight subcrepitant rhonchus. The heart's sounds are natural. The tongue is somewhat furred; the pulse feeble and accelerated. The sputum which his mother first brought to me consisted of the ordinary bronchitic secretions, containing small shreds of white membrane; but to-day I have received several portions of solid material, which were expectorated two days ago. When expanded in water, they are about an inch in length, and have a trunk of about the size of a

erow-quill, with numerous small branches diverging from it. The solid portions are composed of white membranous laminae arranged concentrically; and though somewhat softened from the length of time which has elapsed since their expulsion, have considerable resistance; none of the pieces have the slightest tinge of blood.

He was directed to continue the same course as before, and in addition a pill containing Dover's powder and hyoscyamus was ordered to be taken at night, and a blister to be applied between the shoulders.

April 3d.—Since the last notes were taken, he has continued to expectorate the membranous bodies every second or third day; sometimes they are brought up with a cough; at others, they rise into the throat, and are expelled with a feeling of sickness, either by the mouth or through the nostrils. He has brought up a considerable mass about two hours ago; they have the usual form: the largest piece is about two inches in length, the trunk is as thick as a writing-quill, and the subdivisions decrease in size till they become very minute. His mother thinks the masses grow larger; of various portions which I have seen, all have been unmixed with other secretions, and free from any appearance of blood. Upon the whole his general health continues much as before, but his mother thinks he is losing flesh. The left side of the chest is altogether somewhat less resonant than the right, and the difference is most marked at the left supra-scapular region. A slight irregular subcrepitant rhonchus is heard in every part, but is most distinct at the upper portions, and especially at the left side posteriorly. When last examined, a distinct valvular clicking sound was heard in the left supra-scapular region, but this does not now exist. He was directed to take the oleum jecoris with quinine and iron, and an anodyne and expectorant.

May 4th.—He has continued to expectorate the fibrinous casts at intervals since the last date. One or two masses are generally brought up during a day, or for a day or two, and then he does not expectorate any more for five or six days. The pieces gradually increase in size, and his mother has brought me some to-day expectorated within the last few days, and one of them last evening, larger than any which I have seen before. He is not improving in appearance; his face is much flushed; he does not gain flesh, but his appetite is a little better. He suffers from difficulty of breathing before expectorating the masses, and this is relieved after; he has some cough at the time, but he brings them up more readily than before. The physical signs remain as before. To continue the oil and tonic, and apply a blister between the shoulders.

25th.—He has latterly improved, and now suffers less from difficulty of breathing and cough; his appetite is better, and he is gaining strength. He only expectorated some small fragments of membrane from the date of the last report to the 22d, since which time he has spat up several large pieces, and one to-day. The deficiency of resonance on percussion at the left apex, posteriority, continues, but the increased sense of resistance is more marked than the dulness. There is no appreciable difference between the two sides in front. The respiratory sounds at the left apex, both before and behind, are rougher than elsewhere, but there is no valvular sound. There is a slight rhonchus at the end of a forced inspiration at the right infra-clavicular region, and respiration is harsh in the dorsal regions.

June 12th.—Since the last date he has only three times brought up any solid material, and the pieces expectorated have all been small. The cough is less troublesome, and the membranes are expelled with little effort. His face is less livid, tongue clean, pulse feeble, quiet. Generally his mother says, he improves in warm weather.

July 17th.—It is now six weeks since he expectorated any casts. He is looking stronger and stouter than before. Tongue clean, pulse quiet, digestion and appetite good. The chest is still sparingly resonant above; it is equally so on both sides in front; but behind there is some deficiency at the left supra-scapular region. The respiration is natural everywhere, except in the lower dorsal regions, where it is slightly harsh. Soon after this time he ceased attending at the hospital.

ART. 27.—*On the differential diagnosis of Pneumonia and Pleurisy.* By Dr. GAIRDNER, Physician to the Royal Infirmary at Edinburgh.

(*Dublin Medical Press*, Feb. 28, 1855.)

In this paper Dr. Gairdner considers how far we possess the means of accurately distinguishing those acute diseases of the chest which are at present described as separate nosological forms of disease. The inquiry is one of great interest; pneumonia, for example, has for years been regarded as the acute disease by which we tested our systems of treatment. It was important, therefore, to know whether we could so mark it off as to be able, with sufficient accuracy, to make numerical statements as regards its cure by different remedial agents. Again, pneumonia is the disease on which homœopathy and other late systems of treatment rest their claims, and in the treatment of which they boast their great success. Up to the eighteenth century, we find pleurisy occupying the same relation to medical literature as pneumonia does now. Did this difference of names depend on a change in the nosological type of diseases, or is it not rather a change in the ideas of the observers, who applied different names to the same disease? Dr. Gairdner believes the latter to be the true explanation. A fallacy, too, of common occurrence is, that when we have ascertained a pneumonia to be present, a series of such cases can be submitted to treatment, and the results tabulated, on the supposition that the cases are similar. In the author's opinion, however, pneumonia, in all cases, is not so clearly definable a disease, and, even if we could distinguish it, we could not be any nearer the solution of the question, as it is a disease which varies infinitely and requires for each case a separate adaptation of treatment. That pneumonia presents, even to well-informed and honest physicians, unusual latitude for diagnostic variations, Dr. Gairdner shows, by a copious enumeration of the various chances of error, which must be taken into account; among which, special reference is made to pulmonary collapse, cases of which, from the identity of the physical signs, might be easily classed as pneumonia; and to bronchitis, in the course of which pneumonia so frequently supervened and escaped detection. The differential diagnosis of the two diseases is dwelt upon, and it is shown that, in many cases, the practitioner is necessarily foiled in his differential diagnosis. Should, again, there be an arbitrary exclusion of cases where the two diseases are complicated, we should have a very large proportion of the most dangerous and fatal forms of pneumonia got rid of, and the value of our tables so far vitiated. Again, one man might include, and another exclude, cases of pneumonia, modified by some peculiar constitutional tendency, as fevers of specific type, Bright's disease, syphilis, and gonorrhœa, delirium tremens, diabetes, and tubercle.

In the pneumonia of the old authors, we have cases of pleurisy included; and Laennec considers the cases of pneumonia which he tabulated as more favorable for treatment, as, by his improved methods of diagnosis, he was able to separate the pleurisies from the pneumonias. And yet, of late years, the opinion has gained ground that the statistics of pneumonia would be improved by the addition of a few cases of pleurisy, which is a less fatal disease. The differential diagnosis of the two diseases, pneumonia, and pleurisy, is fully considered in the cases where the two affections are combined; Dr. Gairdner believes it to be extremely difficult to indicate in a satisfactory manner to what extent the pneumonic, and to what extent the pleuritic elements respectively are present. From an analysis of 41 cases of pneumonia occurring in hospital practice, it appears that in only 8 was pleurisy absent, and of these 8 cases there were 6 where there was incipient broncho-pneumonia; in 1 there was incipient abscess, and 1 there was hemorrhage of the lung. There is not a single case of fully formed and fatal pneumonia unaccompanied by a considerable amount of pleurisy. In 47 cases of pleurisy and fibrinous dropsy, there are only 4 cases of uncomplicated pleurisy. It results from these considerations, that acute uncomplicated pleurisy and pneumonia occur so seldom that any attempt to separate them in diagnosis must fail, as the elements for such a distinction do not exist in practice.

ART. 28.—*Case of Diaphragmitis with Pleuritic Effusion.* By Dr. CONSON, Physician to the New York City Infirmary.

(*New York Journal of Medicine*, Nov. 1854.)

Inflammation of the diaphragm is a rare affection, and any new example is worthy of attention. This case, indeed, is only circumstantial, there being no *post-mortem* verification of the diagnosis, but the symptoms are very characteristic. The striking early symptoms of the presence of motion in the thorax in breathing, with its absence in the abdomen, reversing the signs of pleurisy; the existence of the respiratory murmur on the side affected, faint, indeed, from pain; and the absence of dulness, on percussion, in the localization of the injury, with the diaphragm as its centre; and the return of the first pain to that spot; the terrible severity of the distress, exceeding that of ordinary acute pleurisy; and the true *risus sardonicus*; all point to the diaphragm, as the seat of the first inflammation. Some of these symptoms, it is true, are subsequently modified by the extension of the inflammation upwards. Other frequent signs of inflammation of the diaphragm are also absent. The probable limitation of the inflammation to the extreme left portion of the diaphragm may explain the absence of hicough and vomiting, which symptoms are usually present when the central portion near the stomach is affected. Delirium was also absent, but this symptom is not essential.

E. C., æt. 42, lighterman, strong and muscular, was struck, on the 18th of October, 1853, with the boom of a lighter, over the edge of the left ribs, or from the seventh rib above and laterally, and from within two inches of the spine posteriorly, downwards and forwards over the floating ribs, and left hypochondrium, producing considerable abrasion, discoloration, and tumefaction, but no fracture of the ribs. He was senseless from the blow for several minutes, and faint and collapsed for two hours. On my reaching him, six hours after the injury, he was just beginning to rally, though the pulse was still somewhat feeble and slow. He complained of occasional severe pain in the region of the diaphragm; sometimes shooting towards the umbilicus, with considerable difficulty of breathing; respiration mainly thoracic. The distress was increased by pressure from the abdomen upwards. Ordered twelve leeches, and an anodyne poultice over the bruised ribs; and, to relieve the bowels, previously torpid, and abdominal pain, a brisk purgative of compound jalap powder, ginger, and calomel; to be followed by low diet.

19th.—Much the same. Bowels moved freely towards noon. At five o'clock in the afternoon, I was suddenly recalled in great haste, and found him with the knees retracted, the head raised, panting for breath, with his face completely distorted with the sardonic grin, and screaming at every breath, with pain, referred to the region of the diaphragm, accompanied with a sense of great constriction. Respirations 30, thoracic; pulse 90, firm. He was promptly bled from the arm, from a large orifice, to 24 ounces. He fainted immediately from the bleeding, and several times subsequently, so as to suppose himself dying, with the effect of relieving the terrible pain, till the faintness left, when it returned. Ordered two grains of opium and five of Dover's powder every hour. Having taken about eight grains of opium in three hours, with little soothing effect, with stimulants, and the finger on the pulse, then somewhat rallied, he was, in the most cautious and gradual manner, allowed to inhale, at intervals, a mixture of equal parts of ether and chloroform, till, in an hour after, the pain was lulled as by magic, and he fell asleep. Ordered soon after, two grains each of opium and calomel every four hours.

20th.—No marked dulness over the lower part of left lung, discovered on the light tapping, that could be borne; loss of motion in the side, probably in part from pain. Respiratory murmur faintly heard; area of dulness enlarged over the spleen; frequent greenish slimy stools tinged with blood, with dysenteric griping; tongue with whitish fur; thirsty; pulse 90, compressible; complains of exhaustion with pain; rather severe in the left hypochondrium, sometimes shooting towards the umbilicus. Ordered to discontinue calomel, but continue

the opium in two-grain doses with morphia suppositories; and a very large blister over the left hypochondrium, and reaching to the umbilicus; directed to use rice-water and arrow-root with beef-tea.

21st.—Blister acted "like a charm;" pain was quite gone, allowing a better examination; there was some dulness on percussing the ribs; loss of motion; absence of respiratory murmur; indicating *pleuritic effusion* from the margin of the ribs about four inches upwards; stools rather dysenteric, but improving; the urine was reddish and charged with lithates.

22d.—Passed a couple of large evacuations, mostly of dark liquid blood; spleen diminished in size; otherwise the patient was much better. The irritable bowels were quieted with powders of bismuth and opium; the moderate pleuritic effusion yielded in a few days to a succession of blisters, and five-grain doses of the iodide of potassium, three times a day in a mixture, with a few drops of camphorated tincture of opium.

From this time, with broths and nourishing diet, he steadily improved; and, three weeks after the accident, was discharged cured.

ART. 29.—*Case of Paracentesis Thoracis.* By Dr. HUGHES, Physician to Guy's Hospital.

(*Assoc. Med. Journ.* Jan. 5, 1855.)

In the paper from which this case is taken, Dr. Hughes relates three others, in which recovery was prevented by malignant or other incurable mischief, and in which the effects of the operation, for good or harm, are not easily appreciable. The case which we select, however, is an admirable instance of the advantages resulting from prompt surgical interference in cases of this kind.

CASE.—*Pleuritic Effusion; Paracentesis Thoracis; Relief; Rapid Cure.*—J. P., æt. 26, by trade a gunmaker, and residing in Whitechapel, was admitted into Stephen Ward (No. 19) on March 1st, 1854, under the care of Dr. Babington. He was unmarried; his parents were yet alive; and he had eight brothers and sisters, all of whom were healthy. He stated that he was never very strong, or in robust health; but that, for the last four years, he had been occasionally liable to shortness of breath, but not to such a degree as to compel him to desist from his occupation. His present disease commenced about a fortnight before admission, when he was attacked with a very severe, sharp, and stabbing pain in the right side, accompanied with rigors and general febrile symptoms. He kept his bed for four days, and then went to consult Dr. Habershon, by whose advice he was much relieved; but he was subsequently induced to apply for admission into the hospital. He then complained of pain in the chest, especially between the shoulders, and beneath the sternum. He had very slight dyspnoea, but a frequent and painful cough; the pulse was small, compressible, and 100 in number; the skin was hot; the tongue furred, and rather dry; the bowels were confined; micturition was natural. General dulness upon percussion existed, both before and behind, over the right side of the chest; together with very marked ægophony; and, upon the left side, the respiration was puerile. He was ordered, upon his first admission, a saline mixture, with fifteen minims of antimonial wine and twenty minims of tincture of hyoscyamus, to be taken three times a day; and to have low diet.

March 3d.—There being no improvement in any of his symptoms, and distress of breathing being now urgent, a trocar was introduced by Mr. Hill at the upper edge of the ninth rib, and about twelve ounces of clear serum withdrawn. He was ordered to take the following pill three times a day:

R Pilulæ Hydrargyri, gr. iij;
Opii, gr. ʒ. M.

As his bowels were confined, he was ordered also to take immediately a scruple of the pulvis rhei salinus. ("Guy's Hospital Pharmacopœia.")

4th.—He felt very comfortable this morning. The pulse numbered 90; was small and feeble; the tongue was coated; the bowels confined. He was ordered to take immediately a scruple of pulvis rhei cum calomelane; and to continue the medicine.

10th.—He was going on quite well; but he still complained of pain, between the shoulders, of cough, and of incapability of taking a deep inspiration. The bowels were open; and the mouth was affected by the mercurial. His appearance had much improved.

16th.—He was much better; the pills had been omitted; and he was ordered to have a blister applied.

22d.—He was much better; slept and ate well. He had but very little pain indeed, and got up daily. An aperient was ordered.

April 3d.—He complained of pain in the right side, at the seat of the puncture; and felt weak. The chest was quite free from fluid. The bowels were open and the appetite good. He was ordered ten minims of tincture of digitalis in saline mixture, three times a day; and was put upon a low diet; and, a few days subsequently, had a belladonna plaster applied.

17th.—He was relieved by the plaster, and was quite free from pain when quiet; but, upon exertion, had some pain in the right side. No dulness existed in the side, nor could any friction sound be heard upon deep inspiration. He felt quite well, and upon this day was presented.

Remarks.—This was a case of acute pleuritic effusion, in which, as I believe, paracentesis was performed, not so much with the view of simply curing the complaint, as for the purpose of curing it quickly, and especially of relieving urgent symptoms. To this end the operation was intended to be subservient; and this object it happily effected. The record is a good illustration of the utility of the operation in such cases, as well as of the trifling inconvenience which, when it is executed with care and after due examination, results from its performance. The operation, however, it must be acknowledged, is but rarely necessary for these especial purposes; and, among the many cases of paracentesis thoracis which I have recommended, witnessed, or performed, I recollect very few indeed in which, under similar circumstances, it appeared to be demanded. One, however, published in a former paper, is forcibly impressed upon my memory. It was a venereal case of my colleague, Mr. Cock's. Without obvious cause, the patient was suddenly attacked with large pleuritic effusion—a perfect *water-stroke* of the pleura. He was incapable of lying down, and breathed with the greatest anxiety while sitting up in bed. The left side of the chest was found, from the physical evidences afforded, to be full of fluid. A trocar was introduced, and some pints of fluid were evacuated, to his immense relief. In about three days, the operation was repeated, with similarly beneficial results; after which he got quite well, under the ordinary treatment for such affections, and lived for several years; and, to the best of my belief, now lives in good health, to record his gratitude for, and to exult in the beneficial effects of the operation.

ART. 30.—*Prevention of the entrance of air in Paracentesis Thoracis.*

By Dr. T. WALKER, of Peterborough.

(*Assoc. Med. Jour.* April 6, 1855.)

Let a piece of quill, fitted to the tube of the canula, be prepared by wrapping round it and securing with a bit of thread, a small piece of thin wash-leather, or sheepskin, rendered limp by wetting it. Immediately on withdrawing the trocar, this quill is introduced into the canula: the wet leather forms a pendulous prolongation of the tube, an inch and a half long, or a little more, through which the fluid will flow freely; but the moment that the slightest act of suction takes place, which, as the chest gets empty, invariably happens, it will act as a valve, and prevent the possibility of any air entering by the tube of the canula.

Of course, the ordinary precautions to prevent the admission of air through the opening made by the trocar, either before or after the puncture, are not neglected.

ART. 31.—*The treatment of Phthisis by Fluoric and Oxalic Acids.*

By Dr. HASTINGS.

(*Lancet*, Jan. 3, 1855.)

The subjoined cases are intended to show that these acids, when administered

in medicinal doses, are not only innoxious, but frequently useful in checking the progress of phthisis. How these acids act, Dr. Hastings does not explain. He thus relates:

CASE 1.—*Cavity in the upper part of the right Lung; beneficial effects of oxalic and fluoric acids.*—Mrs. —, æt. 26, consulted me in the summer of 1853. This lady belonged to a healthy family, but had labored under cough for several months, accompanied by expectoration, which was occasionally streaked with blood. She had been troubled with night perspirations; her appetite was deficient, and she had lost flesh. She also complained of a tickling sensation in the windpipe, which brought on frequent coughing. Percussion elicited a dull sound at the upper part of the right lung, posteriorly, where the respiratory murmur was marked with moist rattles. After two months' treatment with naphtha and bisulphuret of carbon, and local treatment to the larynx, she considerably improved; the dull sound diminished, and the respiratory murmur could be heard, although of a harsh character, over the above region. At this period she left London for Edinburgh, and consulted Dr. Bennett, under whose care she took cod-liver oil until January, when she returned to London. Dr. Bennett wrote to me upon her case at the time, stating that there was no doubt tubercular disease existed in the upper part of the right lung. I did not, however, see the patient until Feb. 1st, when I was hurriedly summoned in consequence of an attack of hæmoptysis, and saw her, in consultation with Mr. Merriman, of Kensington. Upon examining the chest, there were found unequivocal signs of a cavity over the right supra-scapular region; a sub-crepitating râle was heard below the right clavicle; pulse 96. Under the influence of sulphuric acid, combined with sedatives, and afterwards with quinine and small doses of the sulphate of magnesia, the hæmoptysis disappeared. Naphtha, combined with chlorate of potash and cod-liver oil, was employed until the 23d.

At first some improvement took place; eventually the pulse was quickened and the cough increased, and then half a grain of oxalic acid, with half a drachm of the syrup of poppies, was ordered four times a day, and cod-liver oil. This plan was pursued, with a little increase of oxalic acid, with infusion of cascarrilla, until April 5th, with great advantage, the expectoration, however, undergoing no very considerable diminution. The cough was slight, and occurred only in the morning. The appetite was excellent, the nights good, and flesh and strength were rapidly gained. Percussion yielded a less dull sound over the cavity, where the gurgling râle was replaced by a dry sound, and pectoriloquy could no longer be detected. As she had now taken the oxalic acid for a considerable time, and the expectoration did not decline much in quantity, the one twelfth of a drop of fluoric acid was administered four times a day. This occasioned the loss of appetite, sickness, and headache, and was consequently abandoned after two days' use. In the course of a day or two, however, she was restored to her former condition, and the oxalic acid recommenced.

April 20th.—The cough and expectoration had increased; slight gurgling was perceptible in the cavity, and an occasional darting pain was felt below the right clavicle. One forty-eighth part of a drop of fluoric acid was prescribed four times a day.

27th.—The expectoration had considerably diminished; the cough was slight, and no moist râles could be detected in the cavity.

May 25th.—After a fortnight's use of the fluoric acid, the oxalic was again had recourse to; and in this manner the treatment was continued, with one or other of the acids, combined with the occasional use of cod-liver oil, with great benefit, until the latter end of August, when she went into the country, and there had another attack of hæmoptysis. She returned to town in September, and, since that period, has continued the use of these acids, as well as gallic acid, the latter being employed in consequence of a streak of blood being seen in the expectoration.

Up to the present time (Nov. 23d), no cod-liver oil has been taken since her return from the country. The pulmonary symptoms are now better than they have been at any time since she has been under my care; and, although she cannot be said to be free from disease, she is an instance of the advantage derived from the alternate use of these two acids.

CASE 2.—Cavity in the left Lung, treated with oxalic and fluoric acids.—I was summoned, on April 6th, 1854, by Mr. Dixon, of Witham, Essex, to visit a gentleman laboring under phthisis, in his neighborhood, who was too ill to take the journey to London, having, in fact, been confined to his bed for some time. I saw the patient on the following day, with Mr. Proctor, Mr. Dixon's partner. He had manifested symptoms of the disease for a considerable time, and, in addition to the cough, expectoration, and night perspirations, had had several attacks of hæmoptysis. He had derived benefit from cod-liver oil, which, however, often disagreed with him. Upon examination, the chest was found deficient in expansion in the upper part of the left side, where dulness was evident on percussion, and where a gurgling râle was also heard. The lung on the right side was not altogether healthy. His appetite was deficient, and he had become much weaker and emaciated of late. Half a grain of oxalic acid was prescribed three times a day. I heard, in the course of the summer, both from Mr. Dixon and Mr. Proctor, that the medicine had been of considerable use to the patient, who had sufficiently recovered to pursue his usual avocations; and that the only alteration they had made in the treatment was to augment the dose of the acid to a grain three times a day.

On Oct. 18th, the patient came to London and paid me a visit. He then appeared to be, as, indeed, he stated he was, very much better than when I saw him in April; and although the cavity existed in the left lung, the disease was in a much less active state than I found it in the spring. He informed me that he took the medicine uninterruptedly for several months with marked benefit, until it seemed to tighten the cough, when it was discontinued, and cod-liver oil again had recourse to; but as this gave rise to sickness and loss of appetite, it was withdrawn, and for the last few weeks the patient had not taken any medicine, and in consequence of the cough and expectoration having increased during the last few days, he had come to town to consult me. I then ordered the forty-eighth part of a drop of fluoric acid three times a day; since which period I have not seen him.

December 5th.—He came to town this morning, and paid me another visit. His cough and expectoration were less than they had been for many months, his appetite was good, and he had gained strength. The only change in the physical signs was that the cavity had become dry. The fluoric acid was ordered to be continued.

CASE 3.—Extensive cavity in the left Lung; useful effects of oxalic and fluoric acids.—Mr. F—, æt. 31, took cold in the summer of 1851. This was followed by a troublesome cough; and, in the autumn of the same year, by a severe attack of hæmoptysis. The expectoration soon became considerable, the breathing difficult, and the night perspirations excessive. He first consulted me on August 10th, 1852, when, in addition to the foregoing symptoms, the circulation was hurried, the appetite bad, he was unable to lie on his left side, and had wasted considerably. Upon inspecting the chest, depressions were observed below the left clavicle; over this region expansion was deficient, percussion yielded a dull sound, and an extensive gurgling râle was heard over the same space. For eighteen months, the treatment comprised naphtha, bisulphuret of carbon, and cod-liver oil; and during this period, although there were times when he lost ground, upon the whole his health underwent a sensible improvement.

Feb. 28th, 1854.—As he had not been so well of late, half a grain of oxalic acid, with a little syrup of poppies, was prescribed three times a day.

On May 2d, he informed me that he had continued the medicine up to that day, and had been so much relieved, that he expected soon to have been able to report himself well; but during the last few days the cough had become harder, and the expectoration more difficult to bring up. I then ordered him one twenty-fourth part of a drop of fluoric acid, in a mixture, with a little syrup of poppies three times a day.

On June 27th, he stated that, since his last visit, he had lost his cough for a month; but, for the last two or three weeks, it had troubled him again. Upon examination I found the cavity dry; and it appeared to me to occupy less space than formerly.

Nov. 16th.—The acid treatment was continued up to this time with considerable advantage, sometimes combined with cod-liver oil; but the latter was not regularly taken, intervals of a month's duration occasionally occurring, when more was administered.

Although the condition of this patient's lungs was, and, notwithstanding the improvement they have undergone, still is, such as to render his change of complete and permanent recovery not very probable; still I think no unprejudiced person can read the details of this case without coming to the conclusion that in this instance, the good effects both of the oxalic and fluoric acids were plainly manifest.

ART. 32.—*Case illustrating the influence of locality upon Asthma.*

By M. TROUSSEAU.

(*Gaz. des Hôpitaux*, No. 34, 1853.)

In a clinical lecture reported in this journal, M. Trousseau mentions the following remarkable case, as illustrating the strange influence of locality upon asthma.

CASE.—A young man, æt. 28, a native of St. Omer, was subject to repeated attacks of asthma while resident there. He went to London, and resided in the City for two years, and for the whole of this time was free from his malady. He afterwards returned to his native town, and in four days was as bad as ever. After bearing his troubles for three months, he went to Paris to consult M. Trousseau, and in a short time was well. At this time he made a summer trip to Versailles, and there he was immediately attacked by his old enemy. He returned to Paris, and for six months continued free. After this, being obliged to return to St. Omer, he was again attacked so violently as to be thought to be dying. By Trousseau's advice, however, he was carried on a hand-barrow to the railway-station, and brought again to Paris, where his sufferings were terminated.

(C) CONCERNING THE CIRCULATORY SYSTEM.

ART. 33.—*Case of Leucocythemia.* By DR. JAMES WALLACE.

(*Glasgow Medical Journal*, April, 1855.)

The following well-told case forms a valuable addition to the scanty literature of this obscure disorder. Dr. Wallace writes:

CASE.—On the 27th of March, 1852, Ellen Danahy, a mill-worker, presented herself for advice and treatment at the Dispensary of the Greenock Infirmary, where I obtained from her the following particulars: About two years previously she received a kick on the left lumbar region, in which she had severe pain for six days; but she remained in a fair state of health for twelve months afterwards. She then, however, began to emaciate, and observed a swelling about midway between the floating ribs and Poupart's ligament on the left side. This has since been gradually increasing, and, within the last two months, been attended with occasional lancinating pain, aggravated on coughing or pressure. Seven months ago she had an attack of acute dysentery, which has returned within the last eight days. She has resided in Greenock for the last seven years, but is a native of Derry. She is now thirty years of age, and has been a widow for two years. She has had no children, but menstruated regularly till May last, since which, however, the catamenia have been entirely absent. She has never had any fever of the intermittent type, nor been in any ague district. At present she is very anæmic, the sclerotics having a peculiar pearly appearance, and the diathesis being evidently strumous.

She now complains of looseness of the bowels, attended with tormina and tenesmus (the dejecta containing slime and blood), and has pain, increased on pressure, in the epigastrium and right hypochondrium. A large swelling occupies the left side of the abdomen. Its anterior and inferior borders can be accurately felt, the former being a little to the left of, and parallel with, the linea

alba, and the latter midway between the umbilicus and Poupart's ligament. It is smooth on the surface and along the margins (except at the antero-inferior angle, where it is deeply notched), and can be moved upwards, as well as from side to side. The patient complains of a dull pain, increased on pressure, throughout the whole of the tumor, particularly in its antero-inferior angle, the pain besides being occasionally lancinating. There is some fulness in the right hypochondrium, the hepatic dulness being appreciable as far down as the umbilicus, but the margin of the liver cannot be made out. The rest of the abdomen is rather tympanitic; lungs clear; heart's sounds and impulse natural. *No enlargement of lymphatic glands.* Pulse 92, soft.

Having already had under my observation a case of leucocythemia, in connection with hypertrophy of the spleen, which Professor Bennett has reported in his work on the subject, I naturally suspected that this patient might afford an instance of that pathological condition. To ascertain this, I drew from a vein about half an ounce of blood, and found that, about five minutes after abstraction, a creamy-looking substance floated to the top, but was again easily diffused by slight agitation. After standing for twenty-four hours, the serum, which appeared to be normal, separated from the crassamentum, which was firm and thick, and composed of two portions, an upper and a lower, the latter being of the ordinary hue and the former of a cream color, and about one-third of the thickness of the whole clot. Under the microscope, the white clot was seen to be made up of large, white, faintly granular cells, immersed in fibrine, and displaying, on the addition of acetic acid, one, two, or three nuclei with nucleoli. These were also scattered through the red portion of the clot, and bore to the colored disks a proportion of about one to ten.

The nature of the case having thus been established, I was extremely anxious that Danahy should become an in-patient of the infirmary. She was averse to this, however, and I had no alternative but to treat her in the out-department. Accordingly, after examining her urine, which presented nothing abnormal, I ordered her to be leeches on the epigastrium and right hypochondrium, and to take, every four hours, five grains of Dover's powder. This was followed, in five days, by chalk mixture with catechu and laudanum, under which, in a short time, the dysentery entirely abated. She was then put on the saccharine carbonate of iron, alternated with cod-liver oil three times a day, and desired to rub in iodine ointment over the tumor; but under this treatment she made no improvement, the report taken on the 30th of June being as follows: "Cannot take cod-liver oil. For the last three weeks the legs have been oedematous, and the face puffy, the urine being scanty, but otherwise normal. The tumor in the left side of the abdomen has somewhat increased, but is free from pain. There is still, however, some pain in the epigastrium. No fulness of the liver is perceptible, probably from the bulging on the left side of the abdomen. Feeling of fluctuation indistinct. Emaciation advancing. *Glands of neck enlarging.* Appetite weak; bowels regular; pulse 92. To have five grains of the citrate of iron and quinine three times a day."

At this stage of the case I again abstracted a small quantity of blood, and sent a specimen of it to Dr. Robertson, of Edinburgh, who was kind enough, at the request of Professor Bennett, to analyze it for me, the result being as follows:

Specific gravity of blood,	1.044	
Specific gravity of serum,	1.025	
Fibrine,	1.5	
Serous solids,	70.	{ organic, . 64.4
Globules,	79.	{ inorganic, . 5.6
Total solids,	150.5	
Water,	849.5	
	1000.	

At the same time I again made a careful examination of the ordinary as well as the microscopical appearances presented by the blood. Complete separation

of the serum took place in eight hours. It seemed normal as to quantity, but was rather turbid. The crassamentum was not so distinctly divided as formerly into two portions, a considerable number of whitish streaks running through the colored part (which was of a dirty purple), in addition to a thin creamy-looking stratum, which lay on the upper surface, and was about one-fourth of the thickness of the whole clot. The white cells did not appear to have increased in quantity, but there was in addition a few free nuclei. Those of the perfect cells were clearly defined by the addition of acetic acid, and were single, double, tripartite, or quadruple; some, besides, being curved and irregular, and all rendered of a yellowish color by the reagent.

After this the œdema of the legs increased, and the abdomen became so distended with fluid as to cause considerable oppression in breathing, for the relief of which the patient was at last prevailed on to come into the hospital, where, on the 21st of July, she was placed under the care of my colleague, Dr. Fox. The treatment now consisted of hydragogue cathartics and diuretics, which were continued till the 6th of August, when pleuro-pneumonia supervened, the termination of the case being reported as follows in the journal of the ward:

"August 6th.—Yesterday patient was in a pyrexial condition, and was suddenly seized to-day with a sharp pain in the right side of chest. The pain is augmented on taking a long breath, and by pressure. Decubitus on the left side. Percussion of right lateral region dull, a distinct friction sound being audible in that situation. *Cupping to six ounces. Calomel and opium every four hours.*

"7th.—Pain in side relieved. Friction sound still distinct.

"8th.—Pain gone, but dullness exists on left side of chest. Dyspnœa great. Clammy sweats. Pulse small and rapid. *Half an ounce of gin every hour.*

"9th.—Became delirious last night, and died this morning."

The body was inspected two days after death, when, with the assistance of Mr. Gemmil, the house-surgeon, I made a note of the following particulars: The left pleural cavity contained thirteen ounces of turbid serum, the lower lobe of the left lung being in the stage of the gray hepatization, and invested with a thin layer of recently effused lymph, which also covered the diaphragmatic portion of the pleura. The right pleural cavity contained about two ounces of turbid serum, and the lower lobe of the right lung was in the stage of the red hepatization, a few patches of fresh lymph being attached here and there to the lower portion of its investing membrane. The pericardium contained seven and a half ounces of clear serum. The heart was normal, the left cavities being empty, and the right filled with very soft cream-colored fibrine, which, in the venæ innominatæ, gradually merged into the red clot. The abdomen contained fifty ounces of clear serum. Old adhesions existed between the abdominal wall and the portion of the peritoneum covering the upper third of the spleen. This organ was very much enlarged, and occupied the left side of the abdomen, as indicated by the signs observed during life, a deep notch existing at the lower portion of its anterior border. It measured thirteen inches in length, eight in breadth, and five in thickness, and weighed six pounds three ounces avoirdupois. The liver was also considerably enlarged, and rather pale in color, its weight being six pounds seven ounces. The cortical portion of the right kidney was rather vascular. The intestines were pale, and the glands of the mesentery, as well as those of the neck, groin, &c., were considerably enlarged. The other organs were healthy.

Microscopical examination.—The blood from the inferior vena cava and the venæ innominatæ was of a dirty purplish hue, and contained some soft cream-colored clots, which exhibited the white cells (some of which were larger than others) entangled in great numbers, with a few free nuclei, in molecular fibrine, and having nuclei of various forms, similar to those observed in the blood abstracted on the 30th June, but not becoming yellow on the addition of acetic acid. The proportion of white to colored cells, in blood taken from different parts of the body, was about the same as that first noted, except in that from the splenic vein, in which there was a decided increase. In all the specimens of blood examined, there was seen a considerable number of small rhomboidal crystals of a yellowish color, and soluble in acetic acid.*

* These were evidently a species of that class of crystals called *Hæmatoid*, to which attention has recently been directed by Virchow, and other observers.

The pulp of the spleen exhibited, in addition to a few fusiform cells, and an abundance of colored disks, an immense number of small, round, delicately granular cells (the *splenic cells*), a considerable quantity of the *white cells*, and a few large *oval cells*, filled evidently with nuclei of the latter. The trabeculæ, in a section made by a Valentine's knife, were observed to be distinct, but no Malpighian bodies were visible. The lymphatic glands were soft, and yielded on section a turbid juice, which presented, in great abundance, oil-globules, granules, free nuclei, and small delicate granule-cells, with nuclei very indistinct, but more apparent on the addition of acetic acid. A small portion of the liver, squeezed between glasses, showed the hepatic cells with an indistinct outline, and loaded with oil-globules.

ART. 34.—*Notes on the administration of Gallic Acid in Hemorrhages, &c.* By Dr. GAIRDNER, Physician to the Royal Infirmary at Edinburgh.

(*Assoc. Med. Journal*, Feb. 23, 1855.)

Dr. Gairdner has recently read a paper, before the Medico-Chirurgical Society of Edinburgh, in which he professes himself to be sceptical as to the reputed powers of gallic acid in hæmoptysis, &c. He has tried the drug, he tells us, in large doses, not only in hæmoptysis, in the sweating of phthisis, in diarrhœa, and in albuminuria, and he relates some of the cases, but he cannot satisfy himself that the drug was unequivocally beneficial. What he thinks will appear in the following quotation:

"On the whole, if we admit that gallic acid possesses some of the astringent power of its congener, *tannin*, I believe we must regard it as one of the weakest of all the remedies of this class. The same negative attribute which secures its admission to the general circulation (the absence of the power to coagulate gelatin) unfits it for the office of a local astringent, and as a general remedy its physiological properties appear to be of the feeblest possible order. Nothing has struck me so much in the course of these experiments as the contrast between the actual results of gallic acid given in very large doses, and those effects attributed to it when given in very small daily amount. Thus one observer recommends it in the strongest manner as being, in one or two doses of two grains each, an almost infallible antidote to the premonitory diarrhœa of cholera. Another gives it in doses of from three to five grains against uterine hemorrhage. Numerous observers employ it in nearly the same doses in desperate cases of hæmoptysis. Dr. Bayes correctly takes his stand against the idea generally current, that gallic acid has a tendency to produce febrile excitement. He ascribes to it, however, as a physiological action coincident with its therapeutical effects in hæmoptysis, "a feeling of constriction in the forehead and eyes, with a buzzing sound in the ears and head." These effects, I am inclined to ascribe to the disease rather than to its remedy. They are familiar to almost every one as the reaction after loss of blood; and under no circumstances are they more apt to present themselves than after tolerably profuse hæmoptysis. I truly say that I have now observed many persons under the influence of from one to two drachms daily of gallic acid for weeks together without seeing any reason to ascribe to this substance the power of producing any such marked physiological effect. I have repeatedly questioned persons under the full influence of the drug, with the express view of ascertaining any unusual sensations; but except a little feeling of dryness in the throat (not constant), and possibly slight constipation, have altogether failed in procuring any distinct testimony on the subject. In one man, indeed, an impetiginous, or herpetic, eruption on the chin and lips was developed under the remedy; but this same man took it for weeks before, and has taken it for weeks since, without any renewal of these symptoms; and I never noticed a similar result in any other case. Dr. Inglis has repeatedly attempted in this man, by means of bibulous paper impregnated with iron, to procure evidence of the elimination of gallic acid by the skin; the result, however, has hitherto been negative. In some instances, the tongue has appeared to be somewhat loaded while the remedy was taken; in others, it has remained quite clean, and the appetite unaffected. In one lady, a most suscep-

tible and nervous person, extremely attentive to her own sensations, the catamenia were established as freely as usual under its influence in the large dose; nor was any complaint whatever made of the action of the remedy. I cannot, therefore, conclude these observations without indicating my belief that, in continuing to administer gallic acid on the principle, and in the way indicated by some of its advocates, we run some risk of substituting a very feeble, if not inert, remedial agent for other means more deserving of confidence."

ART. 35.—*On Rheumatic Pericarditis.* By Dr. EUTENBERG, of Coblentz.

(*Pr. Ver. Ztg.* 1854; and *Medical Times and Gazette*, Nov. 4, 1854.)

From experience collected by the author, the following conclusions are deduced. First, as to the symptomatology; most authors affirm that there is pain either confined to the region of the heart, or extending from the left side to the shoulder and the mesogastrium. Dr. Eutenberg found it in none of his cases; and he adds that Laennec, Hope, and Bouillaud, have all remarked upon its occasional absence: hence he infers that it is a sign of complication with pleurisy or pneumonia. At a later period, when abundant exudation is poured forth, a heavy pain is experienced.

Severe feverish symptoms occur only in the very acute cases. Then the thirst is oppressive; but the power of drinking limited on account of the severe dyspnoea. The urine is mostly very red, with a sediment of phosphate of ammonia and uric acid. There are severe night sweats, especially about the head.

At the commencement there is a marked sense of oppression, which becomes worse with the increase of the exudation.

The position of the patient is characteristic, whether the pericarditis be acute or chronic. He avoids lying on the left side. The recumbent posture on the back, or, if there be pleurisy, the sitting posture are most convenient. There is generally cough, at first of catarrhal character. Sickness, as mentioned by Knox, Creysis, and Bouillaud, Dr. Eutenberg found only once in eight cases. The pulse is very quick, 140–200. The sounds of the heart are mostly clear and defined; but a peculiar fluttering movement accompanies the heart's beat, when the exudation is excessive, and interferes with its action. Hope remarked this in connection with carditis. The pulse is always small, but not intermitting. Respiration is hurried, but without remission. There is no sign of adhesion of the pericardium to the heart. The author found it twice in bodies where he could not diagnose it during life.

The author did not find Rokitsansky's assertion confirmed, that in the neighbourhood of an abscess of the heart, the muscular substance is infiltrated with pus, easily lacerated and discolored. The want of redness in the pericardium he found remarkable.

The treatment must depend upon the form of disease. In acute cases, attacking muscular subjects, a moderate venesection is recommended; but not its repetition, as Bouillaud has advised. In carditis no bleeding, and in endocarditis very moderate abstraction of blood is recommended. The author makes chief mention among internal medicines of tartarized antimony, combined with sulphate of magnesia, or calomel in severe cases. Should the pulsations of the heart and shortness of breath be considerable, and combined with hurried pulse, Dr. Eutenberg gives Corros. Sublimat., gr. j, dissolved in Sp. Vin. Rectif., ʒiij. Three to five drops to be taken twice daily. Next to corrosive sublimate stand the preparations of gold, but they are less fit for acute cases. In chronic relapsing pericarditis the iodide of iron is recommended.

ART. 36.—*Cases of Paracentesis of the Pericardium.* By (1) M. BEHRIER, and (2) MM. TROUSSEAU and LASEGNE.

1. (*Rév. Méd. Chir. de Paris*, 1854.)

2. (*Archiv. Générales de Méd.* 1854.)

We have to record two new cases of this rare operation. That of M. Behrier is related without any comment. That of MM. Trousseau and Lasagne is made

the text of an essay upon the subject, in which the former case and six others are related. In this essay certain conclusions are arrived at, of which the principal are, that the operation is much less formidable than it is believed to be, as well as much more simple. Indeed, the trepan is not required, and all that is necessary is to puncture the interspace between the third and fourth rib with a common trochar, and then leave the liquor to escape spontaneously, which it does very slowly.

1. *M. Behrier's case*.—Eugenie Viel, æt. 22, admitted to the hospital on 30th January. For the last three years she has had a pleuritic attack each winter. She complains of considerable dyspnœa; respiration frequent, difficult, and interrupted by cough; voice very feeble. Has had a gradually increasing sense of oppression about the chest, which commenced with rigors, followed by feverishness. Left side of chest dull on percussion, both anteriorly and posteriorly; respiratory sounds inaudible in it, with the exception of some sonorous râles at the apex. Right side everywhere resonant; mucous râles audible over the whole lung. Expectoration purulent; pulse 106, small, irregular, and intermitting. Impulse of heart tumultuous; organ displaced to right side; apex beats beneath sternum; cardiac sounds loudest at right margin of this bone. Blisters to be applied to the chest, anteriorly and posteriorly; and to take expectorant mixtures.

Feb. 2d.—Respiration more difficult; extreme anxiety; pulse very frequent, irregular, and thready. M. Behrier resolved on thoracentesis, and having placed the patient in the supine posture, supported by pillows, he introduced a trocar (having a bag of gold-beaters' skin attached to the canula) between the seventh and eighth ribs, at a place which would be crossed by a vertical line drawn from the external border of the nipple. No fluid escaped, but the entrance of the trocar seemed arrested by a hard resisting tissue. There was no bleeding save from the external wound. A second puncture was made higher up, and more in front, in the sixth intercostal space, immediately below the nipple. The instrument was inserted obliquely inwards and backwards, and the stilette having been withdrawn, a serous fluid, slightly tinged with blood, flowed slowly through the canula, until about 300 grammes had escaped. The canula, while *in situ*, was observed to oscillate synchronously with the systolic movements of the heart, and the hand, when placed upon it, could distinctly feel the cardiac impulse. The canula having been withdrawn, the external wound was closed by means of adhesive plaster. The operation relieved the patient; and the breathing became much easier after it.

3d.—Vesicular murmur audible in left lung, before and behind. Heart has resumed its normal position; pulse 104; inspirations 26; no pain or local inflammation. Ordered a laxative.

4th.—Rested ill last night; considerable oppression; heart still in normal site; pulse 102.

Shortly after this, bronchitis supervened, but it was arrested, and on the 22d the patient was pretty well. On the 25th the uneasiness returned; subcrepitant râles were heard, and the sputa became pneumonic. She died on the 28th.

Post-mortem.—Right pleura contained reddish serum. Left also contained serous effusion, and exhibited traces of old adhesions. The pericardium contained 100 grammes of yellowish transparent serum. It was so firmly adherent, by false membranes, to the pleura, that the place of puncture could not be discovered, although it was very carefully examined. On the first occasion the trochar had penetrated the false membranes.

2. *MM. Trousseau and Lasagne's case*.—Pelletier, æt. 16, was admitted into the Hôtel Dieu on the 2d February, 1854. He had been suffering for five days with frontal headache, lassitude, and præcardiac pain. The dyspnœa was extreme, the pulse very quick, the cough trifling. There was prominence in the cardiac region, with increased dulness on percussion at the same point, extending to the second rib and to the right of the sternum; the heart's sounds were feeble and distant. The patient appeared to have never suffered from rheumatism. For a month the effusion continued the same; only once for two days did it seem to diminish, and then there was a little friction at its base. Afterwards, the dyspnœa increased, and the dulness on percussion extended until it reached the clavicle. There was also pleuritic effusion. Matters growing worse and worse, paracen-

tesis was performed on the 18th of March, by M. Jobert (de Lamballe). This was done by an incision in the fifth intercostal space, one and a quarter inch from the sternum. Thirteen ounces of fluid escaped slowly. After this, the cardiac distress was found to be greatly diminished, and respiratory sounds could be heard as low as the fourth rib. A day or two later, the effusion in the pleura was found to have increased, and the heart was displaced to the right. Under these circumstances, paracentesis thoracis was performed in the sixth space in the intercostal line, and sixteen ounces of fluid were removed. Neither pericardiac nor pleural effusion reappeared, but symptoms of phthisis made their appearance before he left the hospital, which he did at the beginning of June.

ART. 37.—*Notes of twenty-two cases of Disease of the Heart among the Hindoos.*

By MR. HINDER.

(*Indian Annals of Medical Science.* Oct., 1854.)

These cases were observed at the Government Dispensary, Umrizur. They are carefully recorded in a series of tables, and the results, which are quite in accordance with the experience of Western countries, are these:

A. Acute Inflammation.

Recent inflammation of the endocardium, or of the muscular structure, was not observed in a single instance.

There were three cases of acute pericarditis, all terminated fatally, and were examined after death; the notes of two were published in the last number of this journal. The history of the third case is very obscure, the patient having died very suddenly on the third day after admission.

On examination, extensive disease of the pericardium was observed, in front it was loosely attached to the heart by recent adhesions of soft lymph, laterally the attachments were closer. On laying the pericardium open behind, about six ounces of pure pus gushed out; the walls of the abscess were formed by the visceral and parietal portions of the membrane, which were here greatly thickened.

The walls of the ventricles appeared to be thinner than natural, an old deposit was noticed near the free edge of the mitral valves. No other abnormal appearances were observed in the organ.

The liver was greatly congested.

Rheumatism was associated with one of these cases. One patient was 20 years of age, not the case of rheumatic pericarditis—the other two men, 35 years each.

B. Chronic changes in the Valves, &c.

In all the other cases, with the exception of the 21st, there was evidence of disease of one or more of the valves of the heart.

Five of the nineteen cases in which chronic disease existed, or more than one-fourth, could be traced to rheumatism as a pathological cause, the patients having, as usual, been attacked long before they came under treatment, at periods varying from five months to ten years. In most of the other cases the history was very obscure, and could not be depended on with any degree of confidence.

Age does not appear to have had much effect as a predisposing cause, except in the rheumatic cases. In the patients now under consideration, eight were under 30 years of age, and only three, or somewhat less than one-sixth, under 20.

Of the five rheumatic patients, three were under 20 years of age, and the remaining two, 25 each; this is satisfactory, for all experience in Europe proves that "rheumatic pericarditis is peculiarly a disease of youth."

The particular orifices affected were as follows, viz.:

	Cases.
1. Aortic constriction,	2
2. Mitral regurgitation,	7
3. Mitral regurgitation and aortic constriction,	2
4. Mitral and tricuspid regurgitation,	3
5. Tricuspid regurgitation,	2
6. Seat of disease uncertain,	2

These conclusions cannot be altogether depended on, as the evidence is founded chiefly on the physical signs; it is clear, however, from the table, that the mitral valves are individually the most liable to disease.

Remains of former pericarditis existed in one case, in which the bag of the pericardium was completely obliterated by universal adhesion of the parietal to the visceral layer. And although the aortic valves were also slightly diseased, and the lungs emphysematous, the heart was neither dilated nor hypertrophied: on the contrary it was decidedly smaller than natural; both kidneys were affected with fatty degeneration, this lesion inducing the fatal termination of the case. It may further be remarked, that the kidneys were not diseased in the other cases examined after death.

ART. 38.—*Case of enlargement of the Thyroid Gland and Eyeballs concurrent with palpitation.* By Dr. BEGGIE, President of the College of Physicians of Edinburgh.

(*Edin. Medical and Surgical Journal*, April, 1855.)

"This case presents a well-marked example of the disease first described by Dr. Graves of Dublin, and afterwards noticed by Sir Henry Marsh, Dr. Stokes, and other Irish physicians; and whose true pathological character was, I believe, first pointed out by me in a paper read to the Medico-Chirurgical Society of Edinburgh in January, 1849, and subsequently published in the 'Monthly Journal of Medical Science.' The affection has since been illustrated by Romberg and Hensch, and other German physicians, and has attracted the notice of some of our best writers on diseases of the eye. The history is interesting, as having occurred in a male, the cases on record, with few exceptions, having been seen in females. It is more particularly interesting, as affording an opportunity of examining the morbid appearances after death, the only record of which that has yet appeared being that communicated to the Pathological Society of Dublin by Sir H. Marsh, and by Basedow in Germany. In the case now related, as well as in that of a lady who had long labored under this peculiar affection, and in whom it proved fatal also, by supervening pneumonia (the only instances which have occurred to myself of instituting *post-mortem* examinations), there exists a remarkable similarity in the chief morbid appearances with those described by Sir H. Marsh. These appearances chiefly consist in the very fluid state of the blood found in the heart and great vessels, in the dilatation of the cavities of the heart, and of the venous trunks, in the enlargement of the spleen and disease of the liver, and in serous effusion into the different cavities, the result of vascular obstruction.

"Since the publication of the three cases related by me in 1849, I have, through the kindness of my professional brethren, seen many additional examples of this affection, a large proportion of which have gradually undergone a cure, while the remainder have benefited, or are now benefiting, by the use of iron, animal food, and fresh air. It is of great consequence to impress those suffering from this affection with the belief of its curable nature, and to urge upon them the persistent employment of the means of restoring the red particles of the impoverished blood, and improving the general health; for we have now examples before us to show that the neglect of these rules must lead, from functional disorder of the heart, to dilatation of its cavities, and to the usual train of consequences resulting from such a morbid change.

"The more extended our experience of the phenomena constituting this peculiar affection becomes, the more convinced shall we be that the point of departure from health is not in the heart itself, but in the impoverished condition of

the blood, which, after a time, affects the heart and vessels functionally, and, by long continuance, involves them ultimately in fatal organic change."

J. K., æt. 32, by occupation a gentleman's servant, many years ago had a fall from horseback, by which he sustained a severe wound on the occiput, from which a profuse and continued hemorrhage took place. He has never been quite well since that occurrence. In the beginning of 1845 he suffered from bilious fever, and made a slow and imperfect recovery. In August, 1851, had an attack of jaundice, which continued more or less for a whole year; and during its progress the symptoms which first attracted attention in connection with the present history developed themselves. For more than a twelvemonth he has been subject to palpitation, breathlessness, and giddiness. These symptoms were soon followed by enlargement of the thyroid gland, and by increased prominence and distension of the eyeballs, so as to give him a remarkable appearance of staring, which was noticed by all his friends.

In the spring of 1853 he first came under my observation. He was a man of middle size, and well formed. His countenance was pallid and sickly; but under excitement, either mental or bodily, his face quickly flushed, and his manner became nervous and embarrassed. At all times, but especially under excitement, the action of the heart was forcible and rapid, and this action was communicated to the vessels of the neck and head. The eyeballs were enlarged and prominent, presenting the appearance of great distension. The thyroid gland was also much enlarged throughout its whole body, varying in size according to the force of the heart's action. This enlargement was accompanied by a strong pulsation over the tumor, and in the vessels of the neck; and a peculiar thrill was felt, and a loud murmur heard, over the whole extent of the gland. The action of the heart was violent and jerking; and a loud bellows murmur attended the first sound, and was heard most distinctly over the region of the aortic valves. In a state of quiet and rest these symptoms become moderate, and the patient was able to continue his domestic service, in the enjoyment of comparative health. He was directed to take persistently for months the milder preparations of iron, and to use a diet chiefly of animal food. Under this plan he improved in health, and all his more urgent symptoms subsided by degrees. In the autumn of 1853, he went to England, and continued, I understand, to improve in health; but I lost sight of him at this time. Early in the spring of 1854, he had engaged to accompany a distinguished officer to the Crimea, as his body-servant. Before the time arrived, however, when he was to have entered on his duties, he was, after exposure to cold and fatigue, seized with inflammation of the chest, and obliged to relinquish the undertaking. His illness was severe and continued, and he never recovered from it. It appears to have aggravated greatly the peculiar symptoms under which he had so long labored, and complicated the aspect of his case. He was able to return to Scotland, however, and in March, 1854, he again, after an interval of several months, came under my notice. At this time he had enlargement of the liver, with jaundice, and the signs of organic disease of the heart, accompanied with general dropsy. His eyes were still prominent, and the thyroid gland enlarged, but neither of these now maintained the striking character which they possessed previously to his leaving Scotland. No remedy was of any avail, and he sank on the 28th of March, worn out with the sufferings of complicated disease in the thorax and abdomen. The body was opened on the 30th by Mr. Johnston, in presence of Drs. W. T. Gairdner and Warburton Begbie, and myself.

Secio Cadaveris.—March 30th, 4 P.M.—Body of a moderately stout and middle-sized man. The linens in which the body was shrouded were in many parts (as the neck, axilla, scrotum, and legs), quite soaked with serous fluid exuded from the body. The cutis was in many parts loose and easily detached from the *cutis vera*, and in every organ of the body examined, signs of decomposition were generally met with—frequently so marked as to obscure the proper pathological conditions.

The subcutaneous tissue, and, indeed, the cellular tissue generally, contained very little fat, and was in every part more or less infiltrated with serum.

On opening the thorax, the *pericardium* was found of large size, and overlapped

at its sides only, by the margins of the lungs. It contained about *six ounces* of a transparent yellow-colored fluid. Upon the anterior surface of the heart—near to its base—a “milky spot” was observed, about the size of a florin-piece, and another upon the opposite surface of the pericardium.

All the cavities of the heart were filled with dark-colored blood in a more than usually fluid condition; one well-formed decolorized clot was found in the right ventricle. The heart was large (might have weighed 16 oz.), soft and flaccid. All its chambers, but more especially the *ventricles*, were considerably dilated; the tricuspid orifice admitted *four* fingers, the mitral *three*. The tricuspid and mitral valves were large, but otherwise normal; the sigmoid valves were also normal. The *vena cava* inferior was unusually large; and the aorta was small when compared with the size of the pulmonary artery. The endocardium and inner surface of the aorta were stained of a deep-red color.

Both *pleura* contained turbid fluid of a dark-red color, computed at about eight or ten ounces in each. The posterior surface of the upper lobe of the *right* lung was firmly adherent to the costal *pleura* by strong short bands of lymph. The lower lobe of this lung was crepitant, and infiltrated with bloody serum; the posterior part of the upper lobe was condensed, non-crepitant, and friable as if hepatized, but the advanced state of decomposition in which it was, prevented a decided opinion being formed concerning it. The left lung was crepitant, with the exception of its posterior part; and from the surface of a section a considerable quantity of bloody serosity was readily expressed.

The sterno-hyoid and sterno-thyroid muscles were much thinner and broader than natural from being stretched over the thyroid body, which was of large size. The external jugular veins were normal; the internal jugulars were large—the left one when slit open measured an inch and a half across at a level with the cricoid cartilage. The thyroid body was of large size, but was not weighed; its weight may, however, be computed at being four or five times greater than natural. Each lateral lobe measured an inch and a half in breadth, and was of a corresponding thickness. This great increase in size was not partial but general, and although the *isthmus* was comparatively larger than the lateral lobes, there was complete symmetry of both sides. It was of a dusky-red color, smooth, and well defined, and slightly irregular on its anterior surface, but still retained the natural convex and semilunar form of the organ when in a state of health.

The peritoneum contained about a pint and a half, or two pints, of a clear fluid, tinged of a bright yellow. The *spleen* was enlarged in all its diameters, and was computed to weigh about twenty ounces. It was of very firm consistence, and on section presented the trabeculae well marked, and also the Malpighian bodies, which were of an opaque yellowish-white appearance. The *kidneys* were both very large and very soft. The cortical was to the medullary substance, relatively, increased in amount, and the great size of both organs seemed to arise from this circumstance; otherwise their actual pathological condition could not be ascertained on account of the advanced state of decomposition in which they were in. The *liver* was certainly not enlarged, perhaps rather small; its surface was somewhat irregular, slightly and superficially fissured at points; no rounded nodules, however (as of cirrhosis), could be observed. On section the tissue was (considering the decomposed state of all the organs) rather hard and dense, and seemed partially atrophied; its color was deep orange, and in some places there was an approach to “nutmeg” congestion.

ART. 39.—*Diagnosis of Fibrinous Concretions in the Heart.* By Dr. B. W. RICHARDSON.

(*Assoc. Med. Journal*, April 13, 1855.)

In former papers, Dr. Richardson has endeavored to bring prominently forward the observations of some of the pathologists of the seventeenth and eighteenth centuries, who have regarded the formation of fibrinous concretions in the heart as a cause of death; and to combine with these observations such new information as modern science affords. It is now his object to speak of the diagnosis of fibrinous concretions in the heart. The formation of these concretions depends either on superfibrination of the blood, or on languidity of the

circulation; and thus they are met with both in sthenic and asthenic condition of the system. The general results are nearly the same in all cases; but the symptoms are modified in detail by the locality and size and mode of formation of the concretion. Where concretions are formed in the right side of the heart—their most usual situation—the general symptoms are those of arrest of the nutrition and general life of the body. The left side of the heart being imperfectly supplied, the arterial circulation is weakened; the pulse becomes small and intermittent; the surface, especially at the extremities, is cold; the veins are engorged; there is a great anxiety; the muscles become restless and powerless; the brain refuses to act; the mind wanders; the pupil dilates; and the acts of excretion are often performed unconsciously. A distressing and peculiar form of dyspnoea also presents itself; it occurs not because the respiration is checked, for the respiratory murmur is audible enough, but because no blood is passing into the lungs to be oxidized. Towards the close of this condition, emphysema of the lungs is very frequently present, and the physical signs of this lesion are a valuable corroboration of the presence of fibrinous concretions. The laborious character of the respiration depends on the deficiency in the supply of blood to the respiratory muscles and nervous centres. This description is applicable to cases in which death occurs in the course of forty-eight or seventy-two hours; but the symptoms are much varied by many causes. In some instances, death takes place almost instantaneously, in consequence of the sudden dislodgement of a previously formed concretion. In other instances, the concretion is not sufficient to entirely impede the circulation; here the symptoms are extended over several days, and exhaustion, and perhaps anasarca, present themselves. In a fourth class, the symptoms may extend over a long series of years, and at times may be in a great measure absent; death occurring at some time from their sudden reappearance.

Fibrinous concretions on the left side of the heart are generally found in the ventricle, and at the root and arch of the aorta. When gradually laid down, they are denoted by certain sufficiently obvious symptoms: 1. There is an unusual tumultuous action of the heart; which Dr. Richardson believes to be a decided indication, in cases of suspected fibrinous concretion, that the deposit is taking place on the *left* side. 2. The lungs present, probably invariably, signs of congestion. 3. The dyspnoea is less distressing than in the cases formerly described. 4. The surface of the body has a dark congested aspect. 5. The body is cold, and not only restless, but convulsed. 6. There is a tendency to coma. 7. Cough is almost always present, accompanied with copious secretion, often tinged with blood, in the bronchial tubes. When a favorable *point d'appui* is present, as in valvular disease, the concretion may seize on this, and suddenly arrest the circulation. In other cases, the concretion may undergo a gradual series of organic changes, and give rise to symptoms much resembling those of valvular obstruction—pulmonary lesions, dropsy, and in many cases hypertrophy. The symptoms of a concretion, whether in the right or in the left side, will be modified by the pre-existence of any organic lesion in the heart or vessels; as by feebleness at any one point of the walls of the heart; by valvular disease; and by dilatation of the heart or of the aorta.

Dr. Richardson has never been able to ascertain the presence of any physical sign absolutely diagnostic of fibrinous concretions. The wild tumultuous action of the heart, present when a concretion is formed in the left cavities, may be met with when there is no concretion. Very often, when the concretion is large, the only physical sign observed is, that the beat of the heart is weak, irregular, and its sound somewhat muffled. In other cases, where the concretion is small and hard, and firmly attached, a sound may be heard which may be, *per se*, distinguished from a valvular bruit. In forming the diagnosis of a fibrinous concretion, the author trusts to the general outline and history of the symptoms; and with this view, in cases where concretion might be suspected, he inquires especially into the presence of hyperinosis of the blood, of a morbid inflammation, or of the absorption of a morbid poison; he also examines the general condition of the patient, and the state of the systemic circulation of the heart and lungs; and if in these he detects the special signs which have already been described, he regards concretions as being present. The author has derived most instruction from the diagnosis of fibrinous concretions in

mation of prognosis, and in withholding useless or injurious plans of treatment. In croup especially, the operation of tracheotomy should depend on the determination of the question whether there was a concretion in the heart or not.

ART. 40.—*A case of Cancer of the Pulmonary Artery.* By Dr. A. WERNHER.

(*Henle's Zeitsch.* 1855; *Medico-Chir. Rev.* April, 1855.)

This singular case consisted in primary cancer of an extremity and secondary cancer in the branches of the pulmonary artery; and all the facts seem to show that the cancer-cells passed as such from the primary growth through the medium of the venous blood, to the right side of the heart, and then into the pulmonary arteries. A general infection of the blood is negatived by the fact that nowhere, except in the direct track of the venous blood coming from the tumor, were cancerous masses found. In fact, an infection of the blood, a general cancerous disease, does not appear to have shown itself before the primary local manifestation in the tibia. Dr. Wernher argues against the hypothesis of a general cancerous disease, or cachexia, even preceding local disease; and urges that the cancer is in fact first a local one, like syphilis, and that the general cachexia is entirely secondary.

In the case now related, it would appear that after the removal of the tumor of the leg, the secondary cancer of the pulmonary artery grew very rapidly.

Dr. Wernher then compares the symptoms of his case with those of cancer of the lung given by Walshe, and finds a remarkable similarity, except that there was superadded gangrene, from the blocking up of the arteries.

A man, æt. 22, came under observation with a large and rapidly growing encephaloid tumor of the knee and tibia, for which amputation was recommended, but had not been performed, when, on January 27th, five days after the patient was first seen, he was attacked with sudden pain in the cardiac region, just to the left of the sternum, with dyspnœa and rapid respiration. Auscultation and percussion disclosed no signs. On the following day, the pain extended to the right side: there was no cough or expectoration, no cardiac palpitation, increase of precordial dulness or murmur. The pulse was 140. The following night, there were many severe attacks of dyspnœa, in which the pulse was scarcely to be felt. On the third day after the attack, some pure coagulated blood was coughed up; and on the following day, a smaller quantity of blood was expectorated. Two or three days subsequently, the dyspnœa diminished, and the patient passed nearly into the same state as before the attack.

All this time the tumor of the knee had been growing, and on the 7th February amputation was performed. It was found to be an exquisite specimen of encephaloid;—but we pass over its microscopic characters. On the following day, there was much fever; and on the 10th February, a return of hæmoptysis. The febrile symptoms continued, and there was increasing weakness till the 19th, when there was shivering, and dull percussion-note of the bases of the lungs. On the 20th and the following days, very frequent cough, serous, bloody, offensive sputa, mucous râle all over the lungs, shivering, heat, miliaria. On the 24th, death occurred, with the symptoms of asphyxia and profound collapse.

On post-mortem examination, the iliac and crural veins and their branches were normal, not thickened, and without coagula; the vena cava was also perfectly healthy. The heart was healthy. The pulmonary arteries, on the other hand, contained coagula of coherent cancer-masses, forming fibres and strings of dull-white color, like boiled rice, which strings were composed of many thinner ones closely pressed together. These masses filled almost all the branches of the right pulmonary artery; the left pulmonary artery contained also many, but was freer. The walls of the vessels were normal in most cases; in some these were incorporated with the contained cancer-masses. The smaller branches were dilated, from the pressure of the masses. The capillaries and the pulmonary veins were perfectly free. Under the microscope, the masses were found to be made up, almost throughout, of cells, exactly like primary cancer-cells, large, oval, with one or two nuclei. In the blood of the right heart, and of the vena cava ascendens, precisely similar cells were found. Nothing similar was found in any other blood.

Besides this, there were large gangrenous abscesses in the lungs; and it was noticed that the arteries leading to them were particularly obliterated by the cancer-masses, and that the vessels in their walls were in the same state.

(D) CONCERNING THE ALIMENTARY CANAL.

ART. 41.—*Effects of position in the treatment of certain Gastric and Enteric affections.*
By Dr. COALE.

(*American Quarterly Journal of Med. Science*, Jan. 1855.)

At a meeting of the "Boston Society for Medical Improvement," Dr. Coale remarked, "that the late frequency of cholera morbus and other similar affections, had given him an opportunity of testing, to a considerable extent, the efficacy of a certain practice of his, based upon observation made some time since, but which he felt wanted confirmation before suggesting it generally. He is convinced, from actual experiment, that persons affected with irritability of the stomach are much less liable to vomit if they lie on the right side than when they recline in any other position—particularly on the left side. The explanation is evident. While lying on the right side, any contraction of the stomach need not much affect its solid contents; but, when lying on the left side, the contents are in the neighborhood of the cardiac orifice, and any contraction of the organ will force them more or less through this opening into the œsophagus; thus, the difference between the two cases will be a simple eructation in the first, and vomiting in the second. This, Dr. C. has now tested in very many cases; and by many experiments in some of them, varying the position to the increase or diminution of the nausea and vomiting. It may be urged in objection to the explanation, that a contraction of the stomach that would force the contents through the cardiac orifice, would produce vomiting at any rate. But the difference is this: the same amount of contraction which, when the patient lies on the right side, throws off gas merely, when he is on the other may force a small portion of solid or fluid matter into the œsophagus, when reflex action is at once excited, and the whole stomach stimulated into action.

"In treatment of cases of flatulence, and of what is commonly called 'cramp colic,' Dr. C. has found reclining on the right side beneficial. It lessens the vomiting—as first said—a frequent attendant in these cases; but, besides this, it gives a more ready escape to gas contained in the transverse colon. For example, suppose the trouble is a spasm, confining gas in the transverse or ascending colon, were the patient on the left side, and a relaxation of the spasm to occur, the gas is still kept behind the affected spot, for the distended intestine is not liable to take upon itself sufficient action to expel it. But, if the patient be on the right side, the gas then ascends and passes on to an unaffected part of the intestine, by which its escape is facilitated."

ART. 42.—*Lactic Acid in Dyspepsia.* By Dr. C. HANDFIELD JONES, Assistant-Physician to St. Mary's Hospital.

(*Assoc. Med. Journal*, July 14, 1854.)

Dr. C. Handfield Jones advises the use of lactic acid in dyspepsia. It is chiefly given it in cases of irritative dyspepsia, where the digestion was and imperfect, and had been so for some time; he does not advise its use at the commencement of the treatment in a severe case, but only after irritative vascular erethism is somewhat reduced. It should be employed in fifteen or twenty minims, in a half-ounce of water, and taken at meals. He states that it seems to mingle with the food, and to supply one of the elements of healthy gastric juice, which is probably imperfectly produced. It need not be confined to cases of dyspepsia, but may be extended to cases where it is desirable to improve the tone and power of the stomach. It is pleasant, occupies but little space, and the only objection to its use is its price; but if much employed, it could probably be obtained cheaply.

ART. 43.—*A new prognostic sign in Jaundice.*

By Dr. CATHCART LEES, Physician to the Meath Hospital.

(Dublin Quarterly Journal of Medicine, Nov. 1854.)

"Many cases of jaundice have occurred," writes Dr. Lees, "in which delirium, convulsions, and coma supervened, and proved rapidly fatal, although accurate examination failed to discover any mechanical obstacle to the passage of bile out of the system, the bile ducts being pervious and empty; so that this form of disease has been described as fatal jaundice from *suppressed secretion* of bile, which means, that the jaundice in such cases depends on the retention in the blood of the elements of the bile, which in the healthy state is separated only, not formed at the liver, and which, when retained, acts on the nervous system nearly as a narcotic poison,—causing a condition of the system analogous to that occasioned by the suspension of the secretion of urine in cases of ischuria renalis, or in some cases of albuminuria. Dr. Alison explains this by supposing that 'the retention in the blood of matter destined to excretion is much more hurtful to the living body than the *reabsorption* into the blood of matters which have been excreted at their appropriate organs, but not discharged from the system in their natural way, owing to some mechanical obstruction in either the biliary or urinary passages.' In reference to this class of cases, Dr. Budd, in his work on 'Diseases of the Liver,' after detailing some observations recorded by Alison, Bright, Graves, and others, thus writes: 'It does not seem possible to deduce from the cases that have been related any sure means of distinguishing jaundice that results from suppressed secretion, from jaundice produced by temporary closure of the ducts, except in the particular cases where the jaundice immediately follows a powerful emotion, or occurs in the course of purulent phlebitis; or in consequence of known poisoning; or where, as in the instances related by Dr. Griffin and Dr. Hanlon, it occurs with peculiar characters in several members of a family, or in several persons living together, in succession. In all these instances, knowledge of the cause of the disease, or of some peculiar circumstances under which it may have arisen, gives significance to symptoms that would otherwise be vague and ambiguous. In other instances, where our judgment must be formed from the symptoms merely, the diagnosis is much more difficult.' Now, it has struck me that the examination of the urine might be of some use in forming not only our diagnosis, but also our prognosis, in these cases of jaundice, particularly as in none of the cases recorded by the writers I have mentioned is there any analysis given of this secretion. I have, therefore, had the urine in some cases of jaundice carefully examined by competent persons lately, and shall proceed to detail one case, and give the results of two others nearly similar, in all of which an important principle of the bile was detected in the urine."

Dr. Lees then relates a case of extreme jaundice from retention of bile, the retention being due to obstruction of the ducts by cancerous growths; and he refers to two other cases of an analogous character, in which, notwithstanding the saturation of the system with bile, there was a complete absence of any symptoms referable to the nervous system. In these cases *cholic acid* was found in the urine; and it is to the excretion of this principle in this way that Dr. Lees is disposed to refer the absence of nervous symptoms. So far, however, this is a mere assumption, and no cases are given to show that, where the nervous symptoms are present, there has been an absence of cholic acid in the urine. Unfortunately, also, the means of verifying the presence of cholic acid are complicated, and we may yet have to wait some time for the required evidence.

ART. 44.—*An inquiry into the Statistics and Pathology of some points connected with Abscess of the Liver, as met with in the East Indies.* By Mr. WARING.

(Trevandrum, 8vo. pp. 206. 1854.)

This essay is very rich in valuable statistical information. It contains, indeed, careful abstracts of no less than 300 cases of fatal hepatic abscess, of 81 cases in which the contents of the abscess were evacuated, and of 25 cases of spontaneous recovery. These cases are carefully analyzed, and many interesting results are evolved, of which we may mention the following.

It is found, for instance, that the proportion of cases of hepatic abscess occurring after or during the progress of hepatitis, dysentery, and fever, is not only much larger than that of any other disease, but of all diseases put together. Thus:

	No.	Per Cent.
Hepatitis, acute and chronic,	131	or 43-666
Dysentery, acute and chronic,	82	" 27-333
Dysentery and hepatitis, or hepatic dysentery,	14	" 4-666
Fever, or common continued fever,	14	" 4-666
Intermittent fever,	5	" 1-666
Remittent fever,	3	" 1-000
Diarrhœa or purging,	6	} " 2-333
Diarrhœa and intermittent fever,	1	
Admitted with hepatic abscess evidently formed,	6	" 2-000
Catarrh and catarrhal fever,	2	} " 6-333
Delirium tremens,	2	
Rheumatism,	2	
Abdominal inflammation,	2	
Constipation,	2	} " 6-333
Constipation and a swelling simulating ventral hernia,	1	
Injury of the side from contusion or fall,	3	} " 6-333
Ulcer on the leg followed by dysentery,	1	
Disease of the brain,	1	
Acute ophthalmia,	1	
Disease of the knee-joint,	1	} " 6-333
Pneumonia (?) following unusual exertion,	1	
Doubtful,	19	" 6-333
	300	100-000

The terminations of these 300 abscesses are as follows:

	No.	Per Cent.
Remained intact,	169	56-335
Evacuated by operation, a solitary abscess being present,	29	} 16-000
" " being numerous abscesses, one opened, and the others remaining intact,	18	
One abscess opened by operation, another subsequently bursting into the abdominal cavity (No. 27),	1	} 4-666
Opened spontaneously into the thoracic cavity,	14	
" " into the right lung,	28	9-333
" " into the abdominal cavity,	15	5-000
" " into the colon or large intestines,	7	2-333
" " into the stomach (No. 243),	1	} 2-333
" " into the hepatic vein leading to the vena cava (No. 222, 223),	2	
" " into the hepatic vein at its junction with the vena cava, and another communicating with the cellular tissue around the right kidney (No. 233),	1	} 6-333
Communicated with the hepatic ducts (No. 284),	1	
" with the right kidney (No. 32, 253),	2	
" with the gall-bladder (No. 160),	1	
" with an abscess in the iliac region (No. 81),	1	} 6-333
Opened spontaneously through the ribs in the back (No. 244),	1	
One abscess had opened into the colon, and another had passed off by the hepatic ducts into the duodenum (No. 149),	1	} 1-000
One abscess had opened into the stomach, a second into the duodenum, and a third had been evacuated by operation (No. 241),	1	
One abscess had opened into the abdominal cavity, and a second into the lungs (No. 48),	1	} 1-000
Terminated in erysipelas of the lower extremities simulating phlegmasia dolens, the abscess opening into the lungs (No. 274),	1	
Doubtful,	5	" 1-666
	300	100-000

The eighty-one cases in which the contents of the abscess were evacuated by operation (which cases occurred in India, at various times, during the last 50 years), are made the subject of the following remarks.

"The proportion of recoveries and deaths, in these 81 cases, in which the contents of the abscess were evacuated by operation, is as follows:

Recoveries,	15 or 18-519 per cent.
Deaths,	66 " 81-481 "
	<hr/>
	81 100-000

"This proportion of recoveries, small as it is, I fear is overrated, as it is a practice with some medical men, to give prominence to successful cases, and to bury in oblivion those which prove unsuccessful. It is a practice alike unphilosophical and culpable—but easily comprehensible—no one likes to be the herald of his own failures.

"Duration of life after the operation, in 47 instances:

Died the same day,	1	The total number of days of life after operation in these 47 cases, is 843; giving an average of about 18 days to each case.
" the following day,	7	
" from the 2d to the 5th day,	10	
" " 6th " 10th "	9	
" " 11th " 15th "	6	
" " 16th " 20th "	2	
" " 21st " 30th "	4	
" " 31st " 40th "	1	
" " 41st " 50th "	3	
" " 51st day and upwards,	4	
	<hr/>	
	47	

"The circumstances which appear to have induced or hastened a fatal termination, may be ranged as follows:

The presence of other abscesses in liver besides the one opened,	19
A combination with dysentery,	17
Gangrenous or sloughing condition of the abscess walls, &c.,	4
Abscess communicating with the lung (iii, lviii),	2
" " with the colon (lix),	1
" " with the pericardium (lxxx),	1
Two other abscesses opening spontaneously (lxxix),	1
Another abscess bursting into the abdominal cavity subsequent to the operation (xxii),	1
Impervious state of the hepatic ducts, delirium (lxv),	1
Escape of matter through the puncture into the abdominal cavity, causing excessive inflammation (xix, lxxviii),	2
Abscess making its way by ulcerative absorption through the coats of the stomach (xlv),	1
Hemorrhage into the sac of the abscess (xlxx),	1
	<hr/>
	51

Death was preceded by great exhaustion, in	6
" " hectic fever, cold sweats, &c., in	5
" " diarrhoea (colliquative), in	4
" " delirium, in	2
" " convulsions, in	1
The patients gradually sank, or the symptoms progressed unchecked in	6

In none of the fifteen cases of recovery does the hepatic affection appear to have been combined with dysentery; in some, this is distinctly stated; in others, it is an inference drawn from the history of the case, the bowels being reported as regular, torpid, and the stools feculent, &c.

"The proportion of cases of hepatic abscess which hold out a reasonable hope of cure by the performance of an operation for evacuating its contents, is

much smaller than most persons are aware of. There are two conditions or circumstances which preclude the probability—it may almost be said, the possibility—of the operation proving successful. 1. The existence of a plurality of abscesses. 2. An ulcerated state of the large intestines, or in other words, the coexistence of dysentery. Let us see in how many of the 300 fatal cases, given in the first part of this paper, the operation under these circumstances would have been applicable.

Total number of cases,	300
There were a plurality of abscesses in	108
	<hr/>
	192
Of the 177 cases in which the abscess was solitary, there was more or less extensive ulceration of the large intestines in	76
	<hr/>
	116

"Thus it appears, that out of the whole number, only in 116, or little more than 1 in 3, could the operation have been undertaken with any reasonable probability of success; and this number would, of course, be still further diminished, by taking into consideration the cases in which the abscess, though solitary, communicated with the lung, colon, or some other viscera, and those in which other organic disease existed.

"Important, as it must be admitted, statistical data, such as the above, are in all disease, yet too much reliance should not be placed upon them when the question actually presents itself, whether or no an operation should be undertaken in any individual case. Under such circumstances, the surgeon must rely on his own judgment, as to the propriety of undertaking it; the condition of the patient, his strength of constitution, the extent of the disease, the complication with other lesions, &c., all these should have the first consideration."

(E) CONCERNING THE GENITO-URINARY SYSTEM.

ART. 45.—*The treatment and nature of Diabetes Mellitus.* By Dr. HEADLAND.

(*Medical Times and Gazette*, Jan. 17, 1855.)

What is the physiological cause of this abnormal and excessive secretion of glucose, or grape sugar? Three chief theories had been brought forward to account for this.

1. *Theory of Renal Disorder.*—By Dr. M. Good, and others of his time, it was supposed that the glucose was formed by the kidney in the act of secretion. The author discusses the various alleged morbid conditions of the kidney in diabetes, none of which are known to be constant. The discovery of sugar in the blood, and other secretions of diabetics, is sufficient to overthrow this theory.

2. *Theory of Saccharine Assimilation;* held by Bouchardat in France, and by the majority of physicians in England. It supposes that the formation of glucose is due to a deranged digestion or assimilation. Most consider that it is formed in the stomach; others blame the liver. This notion, also, the author disclaims—arguing that, after a meal on starchy matters, grape sugar may be found in the blood of a healthy man; that it is part of the function of the liver to form sugar and fat out of albuminous compounds; and that this explanation does not account for the excretion of sugar, for grape sugar given to a healthy man does not pass out in the urine.

3. *Theory of Saccharine Non-assimilation.*—Supported by Mialhe, Liebig, Jones, and others. To this the author gives his own adhesion. It derives confirmation from the experiments of Lehman, Dumas, and D. Thomson. Starch of the food is the chief supporter of the respiratory process. Starch is absorbed without being first changed into dextrine. This is a sort of solution to grape sugar, into which it is all formed in the blood. This grape sugar is not yet in a condition to be oxidized; it is therefore again changed into atoms of lactic acid (or some very similar material). This then combines with oxygen in the blood, supporting the animal heat by its combustion, and

carbonic acid. These changes require certain agents, probably ferments, to effect them. Supposing they have proceeded as far as glucose, and the agency be wanting which should change this into lactic acid—then the glucose, not being available to the system, is excreted in the urine. The liver attempts to supply the want by forming glucose and fat out of albuminous food. This glucose passes also into the urine. In addition to all this waste, the very tissues are preyed upon to supply fuel for the respiration. The author then discusses at length the subject of treatment under the following heads:

A. Erroneous plans of Treatment.

1. Attempts to prevent the formation of glucose.
 2. Attempts to hinder the excretive function of the kidney.
- The first is a natural process; the second is a healthy provision.

B. Doubtful plans of Treatment.

1. The use of diuretics.
2. Stimulation of the nervous centres, as by strychnia.
3. Treatment directed to the liver.
4. The use of oxidizing agents.

C. Correct plans of Treatment.

Dietetic rule.—To supply, if possible, such articles of food as shall be able, at the same time, to nourish the patient, and to maintain the respiratory combustion without passing through the stage of glucose. (Among other things, fat and oils, dry wines, and milk, are recommended.)

Therapeutic indications:

1. To give some remedy that shall seem to be capable of causing the glucose to undergo its normal transformations. (Yeast, rennet, pepsine, &c., are discussed.) The author particularly recommends *milk just turned sour*, as containing a decomposing caseine, which transmutes milk sugar into lactic acid. He had advised the use of this remedy in his "Essay on the Action of Medicines." It should be used as an article of diet; or it may also be given in enemata, and in warm footbaths.
2. To replace the urinary secretion by means of diaphoretics and purges.

ART. 46.—Cases of Diabetes treated by Rennet. By Dr. NELSON of Birmingham.

(*The Lancet*, Jan. 20, 1855.)

Dr. Nelson relates the following three cases for the purpose of showing that rennet is valuable:

"Firstly. In acting as a substitute for the morbid deficiency of the natural gastric juice; and

"Secondly. In thus allowing time for other remedial agents to be employed, which may be considered counteractive of the essence of the disease, whatever that may be thought to be."

CASE 1.—R. R.—, æt. about 62, first came under my care in the latter end of the year 1852. He had been laboring under diabetes for about twelve months. He was broadly built, and his complexion was rubicund; but he stated that he had formerly been much stouter, and of higher color. He complained of debility, languor, and sleeplessness; he had no appetite; his tongue was thickly furred; and his breathing very short. He could not sleep at night, partly from mere restlessness, and partly from the intense thirst. He passed about ten or twelve pints of urine in the twenty-four hours, of specific gravity 1035. Bowels regular, and no cough. He had been taking stomachic bitters and ferruginous preparations, which I then saw no reason materially to change; and afterwards I prescribed lime-water, which I had in former cases used with some benefit; but, though it diminished the excretion of urine, it seemed to increase the constitutional irritability, even when combined with free doses of opium and hyocyamus. In about a month after, the rennet was resorted to, along with the adjunct of stomachic bitters and sedatives, and while he took, before each meal, a draught of infusion of gentian, with the carbonate and phosphate of soda, along with hyocyamus and hydrocyanic acid, he drank with his food whey or water, with an addition of rennet. In a short time thereafter,

a remarkably beneficial change came over his general symptoms. Within three weeks, his appetite became much improved; he ate his food with relish, and could walk without fatigue, slept better, had much less thirst, and his urine diminished to six pints in twenty-four hours—specific gravity, 1030, and, on being boiled with liquor potassæ, turned to a dark-sherry color, instead of a deep port as at first.

In the course of a month more, the changes were still more favorable. He felt strong, and breathed easily under exertion; his appetite was good, and his perspiration natural; he slept soundly, and had no remarkable thirst. The urine came down to four or five pints, of still less specific gravity, turning to a pale orange under potassa, and not compelling him to rise during the night. He had also gained about ten pounds in weight; and so continued in this improved, though not cured, condition, persevering with the rennet, and with the limited use of saccharine food. He died about twelve months thereafter, of a very sudden attack of extensive bronchitis, from exposure to cold after heat; but, up to that time, had no suffering from the usual symptoms of the diabetes.

CASE 2.—Mr. T. A —, æt. 45, had been known to labor under diabetes for about eighteen months before I was called in; and was so exceedingly reduced as to be quite confined to bed. As he lived at some distance in the country, I saw him once a week. On the first visit, he complained of heavy headache, sleeplessness, and restlessness. He had no appetite whatever, and drank milk alone. He seemed pale and haggard; his tongue very dry; his skin without a particle of moisture, in some parts like rough parchment; and his emaciation extreme. He had pains in his extremities; and also over the liver, stomach, and bowels. The coughing was incessant and exhausting; and there was a very great expectoration of glairy, gelatinoid, and sweet mucus. The stools were white; and, though the percussion over the chest was good—excepting at the lower part of the right side—there was large moist rattling all over the chest, and a peculiarly harsh, leather-creaking sound at the inferior part of the right side. The urine amounted to twelve pints, of 1045 specific gravity, and the thirst corresponded. The case appeared desperate; unless the morbid conditions of the lungs and liver could be amended, which was very doubtful. However, he was ordered an expectorant draught, and also took the rennet with food, as in the first case, and his diet was ordered to consist of eggs and oysters.

After eight days there seemed little change, except that the expectorated fluids were fuller of air-bubbles, and rather more purulent. The stools were still white; pills of ox-gall were prescribed along with the rennet. He was also blistered over the right side.

Eight days afterwards there was still but very little change, but the stools were certainly a little better colored. Otherwise he was much the same. However, in a fortnight more, he stated that his headaches were gone, and that he slept a little better at night. His tongue was moist; his appetite was improved; he could eat a little solid food without drinking, there being now a natural secretion of saliva, which he had not experienced for more than twelve months before. He looked strongly and more cheerful; the expectoration was yellower and gelatinoid, and tasted salt instead of sweet. The stools were still rather watery, but the urine and the thirst were notably reduced, and there also appeared a red sediment in the fluid after standing. He took some mercury and calomel, taraxacum, and continued the ox-gall and rennet as before.

On the 9th of May, his stools were still pale; but the symptoms were now rather favorable, excepting as regarded the cough and profuse perspiration. He now drank not more than half of what he used to take, and amounted to only six or seven pints. Mixture continued.

On the 16th of May, about forty days after the first visit, he was eating food tolerably well, and had plenty of saliva; he also was stronger, and was enabled by his sitting up in bed more easily; he perspired freely, which had not been done for a long time; his cough troubled him on cold days, and when the weather was warm; he drank rather more fluid than he had before; his kidneys, though not particularly thirsty; and his urine was reduced to four and a half pints, containing a good deal of red sediment.

natural rank odor, and a specific gravity only of 1030, boiling, with potassa, to an orange hue. Crackling bladder sounds were still heard over the right side, with marked dulness, and stools pale.

Up to June 6th, these comparatively favorable symptoms continued, interrupted by occasional attacks of diarrhoea, which commenced with acute pains in the epigastrium, gradually worked downwards, and were only relieved by the tincture of opium. At this time, the weather getting cold and unsettled, his cough and other chest symptoms became much aggravated, and his appetite failed again, but there was no return of the thirst, nor any great micturition of saccharine urine. After this he fluctuated, but rather, on the whole, got worse from week to week. His cough and expectoration became more intractable; the pain and dulness on the right side increased; the stools continued pale, whenever the ox-gall was not taken; purging set in more obstinately than before; his tongue, &c., became aphthous; and he ultimately died on the 26th, but without any return of the one peculiar symptom of diabetes, beyond the extent last mentioned.

CASE 3.—Mr. J. P.—, æt. about 56, consulted me first in the earlier part of October, 1853, stating that he had had diabetes for upwards of twelve months past. He was pale and sallow, had become greatly reduced and debilitated, and had lost appetite; his skin was very dry, and his secretions generally sluggish. He could not eat without washing the food down with copious draughts of fluid, there being scarcely any saliva, and he was unable to sleep at night from the intolerable thirst. He passed about twelve or fourteen pints of urine a day, largely charged with sugar, specific gravity 1045, clear and pellucid; vital organs otherwise acting well, but bowels rather torpid. He was ordered some aperient pills, a bitter stomachic mixture with the carbonate and phosphate of soda, and hydrocyanic acid, before food, and as much of the fresh rennet, with whey, as he chose to take at meals.

From the first period of taking it some amendment was experienced in his general sensations, as to languor, enjoyment of sleep and food, and also in the gradual decrease in the amount of urine, and in the frequency of passing it. There also began to appear a cloudy sediment in the urine, which had not occurred before; yet it was not till beyond the middle of November that any very notable alteration showed itself; at that date, however, the amount of urine was decidedly less, not exceeding six or seven pints a day. The odor was now a little rank, and it had some granular sediment. He could eat without requiring to drink so much, and was not so disturbed at night by thirst. The specific gravity came down to 1040, he had gained two pounds in weight, and the moisture had returned to his skin.

By December, he passed less liquid by the kidneys than he drank, and was further improving, when, from misapprehending the purport of an observation that I had made concerning the returning perspiration being a good symptom, he walked himself hard, even to sweating, caught cold, and felt again weak. The cough was soon subdued, however, and he went on again gradually improving as before.

In January, 1854, his appetite was reported excellent, and his saliva abundant; his skin was quite moist, and he particularly remarked the returning natural odor of his toes, which had not been apparent since his first illness. He had no unnatural thirst whatever; slept soundly all night, and his urine did not exceed four pints, of 1030 specific gravity, and natural rank odor. Instead of the residuum of the evaporated urine now smelling sweet on being burned, it had a rank, sharp odor, consisting in a great measure of lactic acid, with but a limited amount of sugar.

In February, not only did all the other symptoms, as above described, continue so far favorable, but he also reported the return of his virile functions, which had long been entirely suspended. This was a sufficient evidence of such change in the blood as was necessary to restore all the natural secretions. He continued to use the remedy, and had no relapse at the last period of my seeing him, when he had gained twelve pounds in weight.

ART. 47.—*A new test for Sugar in Urine.* By M. LUTON.

(Gaz. Méd. de Paris, Jan. 27, 1855.)

This test (so it is said) is easily prepared and unalterable. It acts immediately, and without any preliminary preparation of the urine, and succeeds in some cases when the tests in ordinary use act only slowly or obscurely. The action, moreover, is not at all disturbed by the presence of uric acid, urea, or albumen.

This test is prepared by adding sulphuric acid in excess to a saturated solution (cold) of bichromate of potass, in such a way that some free sulphuric acid will be present when all the chromic acid is liberated. It is, therefore, composed of water, chromic acid, bisulphate of potass, and an excess of sulphuric acid. The color is a beautiful limpid red. If sufficient of the test is added to diabetic urine to communicate a red color, and the mixture be then warmed, there is a brisk effervescence, and the color changes from red to emerald green.

The theory of this reaction is very simple. The chromic acid is an energetic oxidizing agent, particularly in presence of another acid. It gives up some of its oxygen to the sugar, and the result is carbonic acid, water, and sesquioxide of chrome, which sesquioxide dissolves in the free sulphuric acid, and forms the persulphate of this sesquioxide.

(F) CONCERNING THE CUTANEOUS SYSTEM.

ART. 48.—*On the treatment of certain common forms of Skin Disease.* By Dr. BENNETT, Professor of Clinical Medicine, &c., Edinburgh.

(Edinburgh Monthly Journal, Jan. 1855.)

The following passages are from a paper containing an account of Dr. Bennett's experience in the ward for skin disease attached to the Royal Infirmary at Edinburgh:

"*Eczema* is by far the most common disease met with, both in its acute and chronic forms. The local treatment I have found most efficacious is that which I recommended, in the August number of the journal for 1849. It consists in keeping the affected part moist, with lint or linen saturated in a very weak alkaline solution, consisting of soda subcarb., ʒss, to a pint of water. For this purpose it is necessary to cover the moistened lint with oil silk, or gutta percha sheeting, which should well overlap the lint below, so as to prevent evaporation. The usual effect is soon to remove all local irritation, and especially the itching or smarting so distressing to the patient; to keep the surface clean, and prevent the accumulation of those scabs and crusts, which in themselves often tend to keep up the disease. After a time, even the indurated parts begin to soften, the margins of the eruption lose their fiery red color, and merge into that of the healthy skin, and, finally, the whole surface assumes its normal character.

"In private practice, it is often a matter of great difficulty to secure a proper application of the lotion. Individuals are slow to accept the idea that constant moisture of the part is absolutely necessary for the treatment, and hence vigilant superintendence and frequent visits are requisite, in order to watch the progress of the case. Even in the hospital constant watchfulness is necessary, to see that nurses properly cover the eruption; and when, as sometimes happens, this is given to the patients themselves, it almost always fails. Then there are some portions of the surface which it is very difficult to keep moist and well covered, such as the face and axillæ. But, by carefully adapting lint and gutta percha sheeting, attaching strings to the edges of the latter, so as to keep the whole in its place, I have never failed in ultimately carrying out my object.

"In addition to stating what I have found to be useful, it is important to state what I have, on careful trial, ascertained to be useless or injurious. Potassium permanganate is more generally employed in this and a variety of other skin diseases than citrine ointment, an application that I have always found to irritate and render eczematous eruptions worse. At the same time, there are some very

forms of the disease, which I have been told are cured by this preparation, but what these are I have never been able to ascertain. Indeed, all greasy applications whatever, in the majority of cases, are useless, and the patients themselves inform me, are very 'heating.' In some rebellious chronic instances, I have thought the oil of cade has been beneficial, applied locally, although I have not yet tried it sufficiently often to recommend it strongly. In a few cases of acute eczema, I have tried the freezing process recommended by Dr. Arnott, but the salt of the frigorific mixture, and the cold itself, has caused apparently so much agony that I have been deterred from using it, especially when the emollient moist alkaline application is so efficacious. This mode of treatment, however, undoubtedly demands further trial, and I propose to report a more extended experience of it on some future occasion."

* * * * *

"*Lichen and Prurigo*.—In both these affections constant inunction with lard is as beneficial as constant moisture in the eczematous and impetiginous disorders. In the prurigo of aged persons, the *Ung. Hyd. Precip. Alb.* is a useful application, although the disease is not unfrequently so rebellious as only to admit of palliation. The chronic papular diseases often constitute the despair of the physician.

"*Psoriasis*, and that modification of it known as *lepra*, are very common diseases, and are uniformly treated by me externally with pitch ointment. I have satisfied myself by careful trials that it is the pitch applied to the part that is the beneficial agent, as I have given pitch pills, and infusion of pitch, largely internally without benefit. With the hope of obtaining a less disagreeable remedy, I have frequently tried creosote, and naphtha ointment and washes, but also without benefit. Lastly, I have caused simple lard to be rubbed in for a lengthened time, but without doing the slightest good. The oil of cade is also very useful, especially in psoriasis of the scalp. Internally, I give five drops each of Fowler's solution, and of the tr. cantharidis. It is rare that the internal treatment alone produces any effect on a case of psoriasis of any standing. If a case resists this conjoined external and internal treatment, I have always found it incurable. About a year ago I carefully treated a series of cases internally, with Donovan's solution, without producing the slightest benefit.

"*Favus* is a very common disease in Edinburgh, and is most readily removed, first, by poulticing the crusts till they fall off, and the skin presents a smooth, clean surface; secondly, by shaving the hair; and thirdly, by keeping the scalp continually covered with oil, so as to exclude the atmosphere, and prevent the growth of the parasitic fungi, which constitutes the disease. For this purpose, a gutta percha or oil-silk cap must be constantly worn. A continuance of this treatment for six weeks produces a cure in young persons, if combined with cod-liver oil, generous diet, and anti-scorfulous remedies internally. I have tried the lotion of sulphurous acid, recommended by Dr. Jenner, and found it successful in a few cases, but the treatment by oil is so easy as to be far preferable to it. Very chronic cases are cured with difficulty, but so long as the oil is applied, the disease never returns, and mere freedom from the disgusting crusts is a great gain."

* * * * *

"The great difficulty in the treatment of skin diseases generally consists in their having been mismanaged in the early stages—a circumstance I attribute to their not having, until a recent period, been much studied by clinical students. Many chronic cases of eczema are continually coming under my notice, which, in their acute forms, have been treated by citrine ointment, or other irritating applications, which almost invariably exasperate the disorder. I shall not easily forget the case of one gentleman, covered all over with acute eczema, who had suffered excessive torture from its having been mistaken for psoriasis, and rubbed for some time with pitch ointment. In the same way I have seen a simple herpes, which would have readily got well if left to itself, converted into an ulcerative sore, by the use of mercurial ointment. Nothing is more common than to confound chronic eczemas of the scalp with favus, although the microscope furnishes us with the most exact means of diagnosis. I need scarcely say that the correct application of the remedies I have spoken of can only be secured by

an accurate discrimination, in the first instance, of the diseases to which they are applicable.

"The general constitutional treatment in all these cases seldom demands aperient or lowering remedies except in young and robust individuals with febrile symptoms. In the great majority of cases, cod-liver oil, good diet, and tonics are required. In a few instances, sedatives, both locally and internally, are necessary to overcome excessive itching or irritation. These the judicious practitioner will readily understand how to apply according to circumstances."

ART. 49.—*On the treatment of Acne Rosacea.* By DR. MORRIS.

(*Lancet*, March 4, 1855.)

After some remarks upon the pathology and general treatment of this affection, in which known notions and rules are applied, Dr. Morris thus proceeds to speak of the local treatment: "The local treatment is of the highest importance, and the agent which I wish to place more prominently before the profession for this purpose is sulphur. I advocate its claims with the more freedom, as it is no new remedy, and has obtained weighty suffrages in past years. Thus Rayer says—'Cold sulphureous applications, *en douche* and *en arrosoir*, are very efficacious in restoring the skin to its natural state.' Other similar opinions might be added. In one remarkable instance this application readily effected a cure after the patient, a lady, had suffered the vexation of the complaint for twenty years, and had undergone an immense variety of treatment without benefit, ending with the homœopathic; in other cases the same result speedily followed after four and six years. It would seem that the sulphur works its way into the sebaceous follicles, where it probably dissolves to some extent in the oily secretion. It has been recommended, as an internal remedy, in which case it might reach the same position, as it is eliminated by these glands when taken for any period. The form in which I have invariably used it is recommended by Mr. Erasmus Wilson for the treatment of acne in general. In my hands it has appeared to possess little, if any, influence over the punctuated form; while for the rosaceous variety it appears to be the remedy. It is as follows: A drachm of camphor is pulverized with alcohol; twice as much milk of sulphur is then added (Mr. Wilson recommends sulphur sublimatum); afterwards distilled water, to render it sufficiently liquid for use. This lotion is smeared with the finger over the face freely at night, and more sparingly in the morning; the effect is generally very soon apparent, and is often most striking. The lac sulphuris often contains as much as sixty per cent. of sulphate of lime; this does not appear to interfere with the action of the remedy. This preparation is preferable, on account of its minute subdivision, which makes it less irritating, and also for its whiteness. The use of this lotion should be persisted in for a considerable period, if the blotches return; and if the surface be thus preserved in a healthy state, nature will gradually restore the deeper-seated structures to their normal condition. It does not appear to lose its efficacy by continued use. In conclusion, this annoying malady cannot be concealed; it obtains little commiseration; and if it be rendered in any degree a rare spectacle by the general adoption of what the writer believes to be an improved treatment, he will have amply attained his object in writing this paper."

ART. 50.—*Cases of a peculiar disease of the Skin.*

By DR. SHEARMAN, of Rotherham.

(*Medical Times and Gazette*, Jan. 13, 1855.)

These cases are marked by a full eruption of a roseolous character, and remarkable swelling of the skin on the chest, abdomen, and extremities, with pitting on pressure, and without albumen in the urine. Their nature is not very obvious.

"During the last two months," writes Dr. Shearman, "I have met with a peculiar eruption among children under 12 years of age, attended by symptoms unaccountable and extraordinary, that I will relate the progress of two of

for the express purpose of inquiring whether any disease of the same description has been observed by others in the profession. I have never met with two cases in the same house, although three of my little patients had several brothers and sisters. It therefore cannot be contagious. Nearly all of them had gone through measles many months since, and three had had scarlet fever the latter end of last year. In no case could I find either sore throat or red tongue.

"On the 5th of December I saw M. D—, a healthy boy, æt. 10, and found his face and eyes swollen, cheeks very large, not puffy, quite elastic, and a very full eruption all over the face and neck, exactly like the *roseola annulata* described by Mr. Erasmus Wilson, in Fasciculus IX of his admirable 'Plates of Diseases of the Skin,' except that the spots were not so circular. He had not a symptom of measles; his pulse, tongue, and appetite natural; bowels rather confined; urine free, acid, specific gravity 1020, and no albumen. On the 6th the redness and swelling had extended to the breast, without any marked symptoms of disordered functions. On the 8th it had extended to the abdomen and legs. He could not button his trousers, or put on his usual stockings, on account of the increase of size; yet there was no pitting, and no albumen in the urine. The only abnormal substance in the urine was a large quantity of epithelium and a few oxalates; the quantity was normal. On the 12th his abdomen was so much increased in size, that his trousers would not button by six inches. The only thing he complained of was the occasional itching and smarting, and the confinement to the house, which I had insisted upon. From this time the swelling and dark-red eruption gradually diminished; but he is still (December 26) not quite free. I examined the urine this day, but found not a particle of albumen.

"J. M—, a fine healthy boy, æt. 8, was seized on the 9th of December with swelling in the eyelids and upper part of the face. He had recovered from measles about three months ago, and his mother thought he was going to have another attack. When I first saw him I had seen four cases of the same disease, and then felt pretty confident this would take the same course. I told his mother he would swell all over as the dark-red patches of inflammation in the skin spread. This took place, going gradually down to the feet. On the 14th of December his abdomen was so large that he could not button his trousers. The child did not appear unwell, but ran about and enjoyed himself nearly as much as when he was quite in health. He had no soreness of throat, nor was his tongue furred or red. He did not complain of thirst. The quantity of urine in his case was increased, specific gravity 1025, acid, no albumen, nor increased quantity of urea, but a good deal of epithelium and some oxalates. This boy has only just recovered his usual size.

"Altogether, I have had seven cases of this unusual complaint; but the two narrated were the most marked. The eruption has continued out from five to twenty days; and, invariably, the swelling and eruption have subsided together. As the eruption is so variable in the time of its continuance, it can scarcely be considered an exanthematous disease.

"I have not been able to ascertain that any account of a similar epidemic is on record. In vol. ii. of the 'Lancet,' for 1848, there is a rare form of roseola described by Mr. Erasmus Wilson; but this was attended by violent febrile symptoms; whereas, my patients, with the exception of the roseolous eruption and general swelling of the cellular membrane, have ailed very little. The congested and dark-red colored patches of skin were slightly raised above the level of the unaffected parts; but the general appearance of the skin was more what might be termed mottled, than assuming any definite form.

"My son, Dr. Charles Shearman, of Sheffield, has examined some of the urine of these patients; and he found nothing abnormal in it, except a large quantity of epithelium.

"I endeavored to ascertain whether these children had been fed on any particular food, or whether the cows from which their milk came were diseased; but I found scarcely two obtained milk from the same source, and that their bread, meat, and puddings were all good. The only thing in common which three of them had taken as food was oatmeal; but I found other children who had eaten the same oatmeal were free from the disease.

"My treatment has been very simple:—rather low diet, mild saline aperients,

and an occasional warm bath, which I found rather added to the discomfort of the little folks than relieved them."

ART. 51.—*Benzole as a remedy for Animal Parasites.*

By M. REYNAL, of Alfort.

(*Dublin Medical Press*, March 23, 1855.)

M. Reynal, of the Veterinary School at Alfort, has been long in the habit of employing benzole or benzin, in the treatment of animal parasites (he having been led to this practice in the first instance by an observation of M. Milne Edwards that the vapours of the fluid is very fatal to insects), and he now proposes a similar treatment in the same class of diseases in man. In veterinary practice M. Reynal has found that this liquid is more effectual and more innocent than tobacco juice, mercurial ointment, or any other of the many remedies used—the parasites being destroyed without any injury to the skin.

Benzole or benzin is a clear, colorless fluid, having an ethereal odor; it is produced by the decomposition of benzoic acid, and of some other organic products.

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

(A) CONCERNING INFLAMMATION.

ART. 52—*On Erysipelas.*

By Mr. SKEY, Surgeon to St. Bartholomew's Hospital.

(*Lancet*, March 24, 1854.)

THESE remarks occur in a clinical lecture recently delivered at St. Bartholomew's Hospital.

"The result of my personal observation of the nature of erysipelatous inflammation is, that it is always a disease of debility—that is, occurring in a debilitated constitution. You will find it almost invariably well marked in the pulse, which is either quick, or soft, or compressible. By the latter term is understood, a pulse that is arrested by slight pressure. This is an unfailing sign of want of power. It follows depletion, whether directly by loss of blood, or indirectly by diarrhoea, or designed purgation. It is arrested by agents that restore blood, and give tone to the system. Such are my reasons for believing that erysipelas should be treated by tonics and stimulants, and not by purgatives, alteratives, and other depletives. You will think me eccentric, perhaps, in my practice after all you have seen done and heard praised by others, when I tell you I have no respect for 'alteratives,' and little anxiety about the 'secretions.' When a patient's powers are depressed to the extent of lighting up disease, it appears to me that the first indication is to endeavor to put a stop to the disease by raising my patient above the level of it. Irregularity of the secretions may be a concomitant evil, but is not a primary or even a positive one; and the disease does not depend on them, but on a want of vital power. To attack the secretions, is to lose valuable time. I am not altogether a convert to the 'secretions' doctrine. I do not so frequently as many others find them at fault. Besides, to speak honestly, I entertain a certain amount of self-distrust; for I candidly confess I do not exactly understand what is meant by the secretions—nor do I quite comprehend to what purpose that universal, and I presume, therefore, that invaluable agent, mercury combined with chalk, is administered. This is one of the mysteries of medical practice. If it be meant that the 'secretions' relate to the liver, I am in doubt, because I don't see it. As you get on in life, gentlemen, you will have gradually unfolded to your view the atrocities of this wretched organ, which has more sins laid to its door than all the remaining organs of the body put together, and being all the time the least offending, perhaps, of the entire group.

"In idiopathic erysipelas, if you find the subject in strong vigorous health, with a firm, hard, and incompressible pulse, give him purgatives, give him diaphoretics, and bleed him by leeches, the scarificator, or the lancet; but, on the contrary, if you find the pulse quick or slow, it matters not which, soft and compressible—if he has been the subject of illness, and has the aspect of weakness—if he reside in a confined part of a crowded city like our own—under these circumstances, order him three, four, or five grains of sulphate of quinine, every four or six hours for a single day. On the day following you may reduce the dose. Without dictating to you the appropriate treatment, I place before you for your selection these two very distinct principles, and you will observe that the latter is not at all incompatible with that proper attention to the action of the bowels without which we may get into some difficulty; but don't suppose it

necessary to adopt that very eccentric doctrine that a daily action of the bowels is essential to health; and believe me, that in such a case as I am describing *relaxation is a greater evil than constipation*. I say, then, if you get a case of erysipelas based on real strength, employ your lancet or your depleting purgatives to your heart's content. But you will not readily obtain the opportunity, for erysipelas is essentially a disease of debility, and when you have witnessed, as I have frequently done, the excellent influence of quinine, of bark, and of wine, you will feel as thoroughly convinced of this truth as I am.

"Between idiopathic and traumatic erysipelas there can be no real difference, yet it is only lately that I have had the opportunity of testing the value of the same principle of treatment in the traumatic form. In the boy John C—, an attack of erysipelas followed a very severe laceration of the scalp, in which nearly one third of the integuments of the cranium were torn from the subjacent bone. On the occurrence of erysipelas, which presented itself in a somewhat severe form, I did not hesitate to give him quinine, and with complete success, for the boy improved from the hour of its administration. Now, supposing to this attack of inflammation delirium had been superadded, would it have been warrantable to resort to the same agent. I have no doubt it would, and I think you may employ quinine or bark in this disease in all its stages, whether coupled with delirium or not; for delirium is but an indication of an advanced stage of the disease, and we have no possible ground for classing it among the inflammatory affections of the brain."

ART. 53.—*On the application of Sulphate of Iron in Erysipelas.*

By M. VELPEAU.

(*Bull. de Ther.* 1855; and *Medical Times and Gazette*, March 10, 1855.)

M. Velpeau observes, that true erysipelas is constantly confounded with other inflammations (viz., phlebitis, diffuse phlegmon of the cellular tissue, and angioleucitis), which differ from it in their causes, seat, progress, danger, and treatment. A prolonged consideration of the nature of the affection has led him to lay down the following propositions:

1. Erysipelas, taken in its surgical sense, has its predisposing cause much oftener in external, atmospheric, or meteorological influences than in the state of health, or general constitution of the patient.
2. The determining or occasional cause is, almost always, a wound, scabs, or some irritation of the integument.
3. Its efficient cause is, matters proceeding from without, or altered tissues, which mingle primarily or secondarily with the fluids of the part affected.
4. The fluids so affected induce general and local phenomena. The first occur before the second when there is, at the beginning, a passage of the fluids into the general current of the circulation. The order of occurrence is reversed when the change only takes place through imbibition.
5. The fluids in the inflamed skin, altered by the morbid element, only seem to circulate, or advance, by endosmosis—the erysipelas still, however, spreading itself along the dermis like oil upon a plain surface.
6. A large proportion of the morbid matter remains to the end under the epidermis, or in the cutaneous tissue, mingled with the blood in the inflamed part.
7. The totality of an erysipelas is almost constantly formed of several small successive erysipelases.
8. An isolated patch of erysipelas ordinarily disappears, of its own accord, in six or eight days.
9. The duration of the entire disease is very variable, according to the number of erysipelas patches that may succeed or combine with each other.
10. The remedies employed, whether external or internal, to be capable of dissipating such a disease, should especially possess the power of modifying the condition of the blood.

M. Velpeau furnishes us with the results of the different forms of *treatment* he has employed in above 1000 cases, in 400 of which he has kept exact notes. In 25 patients, *compression* by bandages was resorted to, with no advantage. In 33, *flying blisters* were applied, without diminishing the mean duration of the disease; these proving advantageous only in certain cases of phlegmonous erysipelas and angioleucitis. No satisfactory result followed the employment of

nitrate of silver in 30 cases. In 200 cases, mercurial ointment was resorted to, with the effect of sometimes diminishing the duration of the affection by a day or two, and rendering it a little less painful. It is, however, very repugnant to the patient, spoils the linen, and sometimes induces salivation. Lard, employed in 23 cases, although not causing these inconveniences, was found even less efficacious. A variety of other substances have been tried by M. Velpeau, but, as he found them useless or injurious, we need not advert to them.

Calling to mind the modifications which the preparations of iron produce in the blood, it seemed to him that a disease so superficially placed, and one in which the inflamed tissues are so infused with altered fluids, was well calculated to be influenced by ferruginous preparations. He employed the *protosulphate of iron* in the proportion of 30 grammes to the litre of water (ʒvii fs. ad ʒxxxv), or 8 parts to 30 of lard. In 40 cases in which this was tried, the erysipelas yielded in from 24 to 48 hours. It is, however, remarkable that, when thus extinguished at this point of departure, it will still spread beyond this, along parts already infused with the iron. Whether the inflammation, in order to undergo modification, requires to become fully developed, and whether the remedy is merely curative, without being preventive, further researches must show. More easily applied to some parts, the ointment would be preferable; but it is somewhat less efficacious than the lotion. When used, it should be applied three times a day to the erysipelatous patch, and some way beyond its margin. The lotion should be applied by means of compresses, which are to be kept on with bandages, and wetted every few hours, so as to keep the skin always moistened. Thus far the remedy has never failed in cutting short the erysipelas; but it has a disadvantage in iron-moulding the linen.

ART. 54.—*Report on Carbuncle.* By Dr. HUTCHINSON.

(*Medical Times and Gazette*, Dec. 2, 1854.)

The following conclusions may be drawn from an elaborate report on cases of carbuncle occurring recently in London hospitals:

1. The frequency of carbuncle has vastly increased of late years, and still continues to do so.
2. But little is known respecting its predisposing causes.
3. It may affect any age, excepting perhaps the very young.
4. Men are much more liable to it than women.
5. It occurs without distinction, at all periods of the year.
6. It occurs in almost equal proportions among the temperate and well fed and the intemperate and ill fed.
7. It has a premonitory stage in a considerable proportion of instances.
8. Its general treatment should be by purgatives and alteratives in all cases, and by stimulants or salines, according to the character of the constitutional disturbance.
9. Incisions are demanded when a carbuncle is spreading, or attended by much pain.
10. In a great majority of cases, free incisions relieve the pain, and in a considerable degree arrest also the spread of the disease.
11. If the spreading and the pain have already ceased, no benefit will be derived from incisions, but the sloughing and suppuration will be much increased.
12. The "core" which separates consists, for the most part, of dead areolar tissue.
13. No proof exists that carbuncle exerts any eliminative influence on the system.

(B) CONCERNING TUMORS.

ART. 55.—*The diagnosis of Surgical Cancer.* (The Liston Prize Essay for 1854.) By JOHN Z. LAURENCE, Surgeon to the Northern and Farringdon Dispensaries, &c.

Churchill, 8vo, pp. 77, 1855.

Mr. Laurence agrees with Professor Bennett in thinking that an accurate

diagnosis can only be arrived at by investigating *all* the circumstances of the individual case, and he, therefore, proceeds to consider all these circumstances after a definite plan, illustrating his remarks with quotations from various standard authors, and by several good cases, occurring chiefly in University College and the Middlesex Hospitals. Of the value of the microscope, simply as a means of diagnosis, he holds—

"1. That in the greater number of cases of cancerous tumors the so-called cancer-cell will be found.

"2. That this form of cell is occasionally seen in growths manifestly innocent.

"3. That, *vice versa* (what is, however, less frequent), tumors anatomically innocent, prove clinically malignant—that 'the cancer-cell is not the *sine qua non* character of cancer.'

"4. That the inferences drawn from the microscopic examination, are not to be deduced from a few isolated cells that may have happened to strike the eye, but rather from the characters of all the cells and of the field of view generally.

"5. That the results afforded by the microscope, must take an important but not an exclusive and overbalancing, position in the series of data, which are to serve us as the premises for our conclusion."

The whole essay is well arranged, and undue length is not one of its demerits. It deals chiefly with old facts and positions, but not altogether so, as may be seen in the remarks upon the anomalous appearances of cancer in bones, which remarks we append.

"Last February, I had an opportunity of examining the femur of a patient who died in the Middlesex Hospital. The shaft of the bone, immediately below the trochanter major was expanded into a cavity which contained a mass of tissue of the most strange appearance. It was of an earthy light liver-color hue (much that of boiled horse liver). It was soft, yet consistent, and tore with a coarsely fibrous fracture; at parts it retained the impression of the fingers like a piece of putty: scattered through this substance were several irregular ragged pieces of bone. The preparation when I first saw it (about twenty-four hours after death) had a peculiar earthy mouldy smell, quite different to what pathological specimens ordinarily possess. My esteemed friend, Mr. Sibley, of the Middlesex Hospital, and myself, examined the mass microscopically, when we found it to consist of—

"First, large finely granular fibres, in great quantity. Second, granular cells of all shapes and sizes. Third, here and there cells bearing some faint resemblance to cancer-cells. Fourth, some fibro-plastic corpuscles. In one of the lungs a nodule of unmistakable firm encephaloid was found. This consisted of all varieties of granular corpuscles, and Mr. Sibley observed some cells closely approaching 'cancer-cells.'

"Shortly after, a very interesting specimen of tumor of the thigh fell under my notice. The section of this tumor displayed the following appearances:

"1st. A fleshy, tawny, elastic mass, which had a distinctly fibrous structure, and here and there exhibited points of translucency and small cavities. This portion of the growth occupied the centre, and formed, as it were, the nucleus of the section.

"2d. Surrounding this was a layer of a soft material, exhibiting all the characters of fungus hæmatodes.

"3d. At the upper part of the section was a small piece of tissue, having the aspect of very firm white encephaloid.

"4th. Some bloody malignant tissue occupied the interior of the medullary cavity.

"*Microscopical examination:*

"1^o. The 'fleshy nucleus' above described, consisted of—

"(a) Multitudes of spherical granular cells of very variable size; and—

"(b) Granular fusiform cells, often with one or more caudations, conferring on them a very singular aspect, and, in rare instances, having traces of what appeared to be a nucleus.

"(c) A very few fibres.

"(d) Minute granules and shreds of disintegrated tissue.

"2^o. The firm encephaloid mass consisted of—

"(a) Granular cells, with distinct large nuclei, which contained nucleoli. These cells corresponded with what is generally accepted as the 'Cancer-Cell.'

"(b) Free nuclei of the forms of 'Cancer-nuclei.'

"3°. The tissue from the interior of the medullary cavity consisted of—

"(a) Granular cells of various forms and sizes, representing, as it were, the elements of the fleshy nucleus.

"(b) A few caudate genuine cancer-cells and some free nuclei, representing, as it were, the firm encephaloid.

"(c) Large bright tortuous fibres, not acted on by acetic acid, constituting the principal element of this portion of the growth.

"(d) In very rare instances, a very broad, densely and minutely granulated fibre was seen projecting beyond the general mass of the above fibres.

"(e) Immense quantities of fine granules of a fatty nature.

"Not a single cell which corresponded with Lebert's 'fibro-plastic cell' was observed at any stage of the examination of the entire growth.

"Not long since, Mr. Erichsen amputated above the knee for malignant disease of the head of the tibia. The compact structure was expanded into a shell of bone not a line thick, which adhered to the subjacent tumor. A section of this exposed (1°) a firm, but elastic, light tawny material, which inferiorly had a more grained yellow-ochre tinted appearance. Altogether, this section exhibited a strong resemblance to the 'nucleus' of the preceding case. On cutting deeper (2°) a soft gray substance came into view; this was not unlike some of the softer varieties of encephaloid; but on further examination at the back of the head of the tibia, under cover of some muscular fibres, a piece of a small firm white lobulated tissue, was discovered, with all the obvious characters of firm encephaloid cancer.

"*Microscopical examination:*

"1°. (a) Broad fibres rendered indistinct by acetic acid.

"(b) Cells of a fibro-plastic nature.

"(c) Cells approaching slightly the cancer-cell.

"2°. (a) Ovoid nucleolated nuclei.

"(b) Tolerable specimens of cancer-cells.

"3°. Consisted nearly exclusively of typical specimens of cancer-cells.

"No one of the preceding cases of cancer of bone contained any cancer-juice.

"From the above cases, and some others, I have been led to conclude that cancer of bone may present itself.

"1st. In the ordinary well-known form of the disease.

"2d. In the most anomalous conceivable anatomical condition, such as is not to be appreciated as malignant disease, excepting by a previous acquaintance with intermediate conditions.

"3d. In the intermediate conditions alluded to."

ART. 56.—*The treatment of Gun-shot Wounds in the late Danish war.*

By M. BINARD, Regimental Physician at Ghent.

(*Nouv. Encyclogr. des Sci. Med.* June, 1854; *Dub. Quar. Journ. of Med.* Feb. 1855.)

"In the history of gun-shot wounds there is a very important point which has already given rise to numerous discussions; and the subject requires, I think, to be reconsidered in accordance with the new ideas which are at present justly beginning to prevail in reference to the treatment of contused wounds, complicated with more or less considerable injury of the bones. Is amputation necessary in the majority of cases of the latter description, or should numerous exceptions be made to the rule almost universally received since the commencement of the nineteenth century by military surgeons, in wounds with fracture of bones of more or less importance? Such is the question I am about to endeavor to answer, in availing myself of some interesting documents printed in a paper by the chief physician, Dr. Neise, in the *Deutsche Klinik* for 1853, and which is a *résumé* of all the reports published by the Danish surgeons on the wounded, furnished in tolerably large numbers by the war of the Duchies during the years 1848, 1849, 1850, and 1851.

"I have lately also read with interest a work on gun-shot wounds by Dr. Simon, published at Giessen, in 1851. This book has caused a sensation in Germany on account of some ingenious and novel views of the author, but especially in consequence of the manner in which he has treated the question of the expediency of amputation in cases of wounds with fracture of the thigh.

"It is, above all, in comminuted fractures of the thigh that this question has an especial importance. We know, in fact, that M. Ribes, agreeing on this point with the majority of French military surgeons, maintains that wounds with fracture of the two upper thirds of the femur rigidly demand amputation, since every attempt made to preserve the limb is invariably followed by a fatal termination.

"A prominent feature in the statements of the German and Danish surgeons who had occasion during the war of the Duchies to perform amputation of the thigh in consequence of gun-shot wounds, is the great mortality by which they were followed. Thus, Dr. Clemmensen had 10 deaths among 15 who had undergone the operation. Dr. Djourup, in summing up all the cases of amputations of the thigh performed in the hospitals of Denmark, finds a total of 90 amputated, of whom 39 recovered, and 51 died (more than 56 per cent.).

"In Holstein, according to Dr. Esmarch, in 128 amputations of the thigh, there were 51 recoveries, and 77 deaths (about 60·15 per cent.) Under certain circumstances the mortality has been excessive: thus the principal physician, Dr. Gotz, who published in 1852, in the *Deutsche Klinik*, an important paper on gun-shot wounds treated in the hospital at Delve, reports that the nine amputations of the thigh which were performed, were all followed by a fatal result, due in almost every instance to purulent infection. I may here remark in passing, that Dr. Clemmensen has observed, as well as Professor Velpeau, that purulent infection was more frequent among those who had undergone amputation than among the wounded who, in spite of severe injuries with abundant suppuration, had preserved their limbs.

"In viewing facts so unfavorable to amputation of the thigh in gun-shot wounds with fracture of the femur, Dr. Simon has broached an opinion entirely opposite to that of M. Ribes, and it must be acknowledged that it is supported by arguments of considerable weight. I am therefore induced to believe that surgeons now acquainted with the advantages to be derived from the employment of the new method (*méthode amovo-inamovible*) in cases of severe fractures of the lower extremities, are, generally speaking, quite disposed to adopt the opinion of the German surgeon, and no longer to consider the dogmatic assertion of M. Ribes, as to the absolute necessity of amputation in fractures of the thigh in any other light than as referring to a last resource, which should not be employed but under exceptional circumstances.

"The following is the mode in which Dr. Simon, in the work already referred to, has expressed his opinion on this subject: 'Comminuted fractures of the thigh, produced by balls, and occupying its middle or upper third, ought in every instance to be treated by endeavoring to preserve the limb. In those of the lower third immediate amputation should be had recourse to.'

"This doctrine, advocating an attempt to preserve the limb in every case of comminuted fracture of the two upper thirds of the thigh, is, perhaps, a little too general; but when we consider the great mortality which almost constantly attends amputations performed at that height, we shall be very much disposed to receive this almost absolute proscription of the operation under such circumstances. We may, in fact,—and present experience seems to prove it,—obtain a more favorable result by attempting to preserve the limb; the question is then reduced to this:—Is amputation of the thigh at this height attended with more danger than the treatment the object of which is the preservation of the limb? My answer would be, that, taking into account the efficacious means we now possess of treating serious fractures of the lower limbs, I think we may adopt this first portion of Dr. Simon's opinion.

"But as to the necessity of immediate amputation in comminuted fractures of the lower third of the femur, although this operation is much less serious than that of the two upper thirds, I believe there will still be cases in which we ought not to have recourse to amputation, and where it will be more advisable to endeavor to preserve the limb. I think even that it would not be absolutely neces-

sary to amputate immediately, except in cases where, the fracture of the bone extending to the knee joint, the latter should itself be the seat of considerable disturbance; for the formidable symptoms we should have ulteriorly to apprehend from this dangerous complication are of a nature to give a prominence to immediate amputation, as the only chance of saving the patient. In fact, while on the one hand the lesion of the femoro-tibial articulation greatly increases the seriousness of the fracture of the thigh, amputation, on the other hand, performed in this situation, is much less frequently fatal than it is when had recourse to at a higher point.

"In the war of the Duchies, moreover, the Danish surgeons had many cases in which they succeeded in preserving the limbs, when the articulation of the knee had been traversed by a ball, and when the lesion of the bones was not too considerable; this was especially the case also in reference to the elbow joint.

"One of the principal reasons formerly adduced in support of the almost absolute necessity of amputation in cases of gun-shot wounds with comminuted fracture of the lower limbs, was the difficulty of transporting the wounded without causing great pain, in consequence of the more or less violent motions imparted to the fractured bones, which were thus exposed to a most intense inflammation. It was especially to a want of means for producing complete immobility of the injured limbs that such occurrences were referable. But this objection no longer obtains to the same degree, in consequence of the efficacy of the new apparatus (*nos appareils amovo-inamovibles*). I have lately witnessed, in a case of severe fracture of the leg caused by the kick of a horse, with what facility a wounded man on whom one of these bandages was immediately applied can be conveyed in a carriage without experiencing any kind of pain or injury.

"The facility of dressing without displacing the limb will be especially valuable in fractures where the splinters are numerous, and which are attended with abundant suppuration, and require frequent examination. I think the padded bandage will afford a decided advantage in this respect, and that it will be particularly useful in comminuted fractures of the thigh, for in such cases permanent extension is out of the question: we must indeed secure the immobility of the limb, but we must also place it in a position capable of being maintained for a long time without inconvenience, and we must therefore never extend it forcibly with the idea of remedying a deformity which cannot be of any importance after a lesion so serious as that under consideration, for if we succeed in preserving the limb, we must esteem ourselves very fortunate in having obtained such a result, even at the price of more or less deformity.

"The treatment of gun-shot wounds has latterly given rise to many controversies, and experience has happily modified some ideas which were too absolute, and has sanctioned some improvements. It is thus that the practice of incisions intended to prevent constriction (*débridement préventif*), formerly believed to be indispensable, is now acknowledged to be useless; that we no longer lay so much stress upon the extraction of certain foreign bodies, and that we willingly leave to the resources of nature, those which could be extracted only by prolonged or violent *manœuvres*; that trepanning the skull is abandoned as useless or dangerous in the majority of cases in which it was before believed to be directly indicated; that the resection of bones is properly preferred to amputation in the articulations, especially in the upper extremities, where this practice has been attended with so much success, that it ought to be adopted as the rule. I think, however, that the question of determining the absolute necessity of amputation in certain cases of fractures of the limbs, is one which should be reconsidered. Now that the treatment of this kind of injury has made so much progress, we must necessarily modify some generally received opinions, and seek the testimony of new facts in support of conservative surgery.

"The surgery of the day, essentially conservative as it is, should make its powerful influence felt on the field of battle, as well as everywhere else, notwithstanding the assertions to the contrary which are repeated in many books, and which are in general based only on very questionable statements of the older military surgeons.

"At the commencement of the late war, the Danish surgeons performed a much greater number of amputations than they did afterwards, because they had subsequently learned to modify their opinions as to the necessity of amputating immediately in certain cases of wounds with complicated fractures, for example, in those of the knee and elbow, which they at first looked on as imperiously demanding the removal of the limb. Favorable results frequently crowned their novel efforts, and they thus succeeded in preserving many limbs which a short time before would have been sacrificed, a lesson which all military surgeons will do well to bear in mind, when they shall be called on to deal with similar cases."

After these remarks, the author gives a *resumé* of a paper by the chief physician, Dr. Niese, in the *Deutsche Klinik* for 1853, which paper is itself a *resumé* of all the reports published by Danish surgeons, on those who were wounded in the wars of Schleswig and Holstein during the years 1848, 1849, 1850, 1851. This *resumé* is also translated at length in the journal from which we obtain these particulars.

ART. 57.—*The prevention of smell in gangrenous sores by a charcoal coverlet.*
By Mr. WORMALD, Surgeon to St. Bartholomew's Hospital.

(*Medical Times and Gazette*, July 1, 1854.)

In some cases of hospital phagedæna recently under his care, in St. Bartholomew's Hospital, Mr. Wormald made an ingenious and very useful application of the disinfecting powers of charcoal. It is well known that dry charcoal will effectually absorb any noxious or offensive gas which can be made to pass through it. On this power, Dr. Stenhouse's disinfecting respirators depend for their efficiency. The difficulty in applying it in hospital practice has, however, arisen from the difficulty of keeping it at the same time dry and in a uniform layer around the part giving rise to effluvia. Mr. Wormald's plan consists in sprinkling freely between two sheets of cotton wool a tolerably thick layer of powdered charcoal, and then "quilting" them together in small segments, so that the powder is retained securely in its place. The pads, thus prepared, may be of any size, according as required to wrap round the end of a stump, or to cover a superficial ulcer. The sloughing sore having been dressed in the ordinary manner, and a little lint or wool so placed as to absorb any discharge which may flow, over all is laid the charcoal quilt, which is then lightly confined by a bandage. It forms, in addition to its disinfectant properties, a very soft and comfortable envelope, more especially if the sore be in such a part that the patient is obliged to lie on it.

ART. 58.—*On the importance of applying Pressure in the treatment of extensive Abscesses.* By Mr. SOLLY, Surgeon to St. Thomas's Hospital.

(*Lancet*, April, 1855.)

"I am not aware," writes Mr. Solly, "how far the plan which it is my object in this paper to advocate, is in general use or not; but I am so convinced of its value, that on the risk of most of your readers being accustomed to this method, I shall venture to bring it forward. I refer to the careful application of pressure over the surface of extensive abscesses after their contents have been discharged, and the early disuse of the poultice and its congener, water dressing. I always prefer cotton-wool to any other kind of pad, and better with all irregularities of surface; and I find that a greater amount of pressure can be kept up by strips of plaster than by a roller. By these means the surfaces of the abscess are kept well in contact, they adhere together, and the discharge soon ceases. The following case is merely one among many that I could adduce, and it is interesting in connection with the treatment of punctured wounds and purulent absorption. In this case of pyæmia, for my young friend, the matter was discharged into the cellular tissue of the axilla, and not into the lungs."

T. S.—was taken, on the 1st of March, 1855, with general lassitude and pain of the limbs, with headache and much prostration. Three or four days previously, he had received a dissection wound in the left thumb; and, on the above date, the part was painful, with some redness and swelling below the nail; the pain gradually extended up the arm, without, however, there being any visible indications of lymphatic inflammation, but with much constitutional irritation, and great prostration of powers.

On the 3d, there was pain and tenderness in the axilla, which gradually extended almost over the entire side; and on the 5th, there was general superficial redness. The swelling, however, seemed localized to a space about three inches below the axilla, with a diameter of about three inches.

I first saw the patient on the 6th, and ordered the application of six leeches, followed by linseed poultice. Infusion of roses, 1 ounce; dilute sulphuric acid, 15 minims; sulphate of quinine, 2 grains; syrup of ginger, 1 scruple; sulphate of magnesia, 10 grains; every four hours.

On the 8th, there was a feeling of deep-seated and indistinct fluctuation at the site of the swelling. Mr. South saw him with me, and considered it advisable to make an opening into the swelling, which was accordingly done; no pus escaped, but half an ounce of serum; and this continued to drain away, in small quantities, during the two following days; and on the 9th, a free discharge of pus commenced.

On the 10th, there was distinct fluctuation about five inches below the first opening; a free incision was made, and some pus discharged; both these openings continued to discharge freely during the next five days, and with considerable relief to the patient; the pain was much less, and the general constitutional irritation also considerably abated during this time. Strong beef-tea and port wine was administered *ad libitum*.

On the 15th, it was evident that there was a large collection of pus, just above the hip; and, on a free opening being made, nearly a pint of pus escaped. A large poultice was kept continually applied all over the side, and the pus was gently pressed out twice a day. At this time, the two upper openings were found to communicate; and a probe passed into the lower one could be pushed, without difficulty, for a considerable distance in either direction, so that the abscess extended from the axilla to the hip. There was free discharge of pus from all the openings, with dead cellular tissue, up to the 19th, when I ordered the poultice to be discontinued, and the whole side to be well padded with lint, and firm pressure to be kept up by means of broad strips of adhesive plaster, carried over the compresses. From the very commencement of this treatment, the discharge of pus rapidly diminished; at the end of five days, the two upper openings had quite closed, and the intervening structures had, to a great extent, recovered their healthy condition, there being tolerably firm adhesion of the opposed surfaces, which had been separated by the burrowing of the pus. The cavity of the lower abscess, which was of considerable size, also began rapidly to diminish, and at this time, March 26th, is apparently quite obliterated.

The patient's general health is rapidly improving; and he has been to the hospital again to-day.

(D) CONCERNING DISEASES OF THE BLOODVESSELS.

ART. 59.—*Cases of Aneurism treated by Compression.* By (1) Mr. MILLER, of Edinburgh; (2) Dr. JOHNSON, of Montrose; (3) Mr. MOORE, of Doncaster; (4) Mr. TEALE, of Leeds; (5) Mr. STUBBS, of Liverpool; (6) Mr. FERGUSON, of King's College, London; and (7) Dr. COLLIS, of Dublin.

1. (*Edinburgh Medical and Surgical Journal*, Jan. 1855.)

2. (*Ibid.*, Jan. 1855.)

3. (*Medical Times and Gazette*, Nov. 11, 1854.)

4. (*Ibid.*, Oct. 28, 1854.)

5. (*Ibid.*, Jan. 20, 1855.)

6. (*Dublin Quarterly Medical Journal*, Nov. 1854.)

7. (*Medical Times and Gazette*, Dec. 30, 1854.)

The following cases possess little or no special interest, except, perhaps, that

of Dr. Collis, in which apparently some new light is thrown upon the theory and practice of the operation. They are, indeed, merely cited as *facts*, which may help those to a decision in whose minds the questions of compression *v.* ligature is still *sub judice*.

1. *Dr. Miller's Case.*—This case occurred in the Royal Infirmary of Edinburgh. The patient was a shoemaker, æt. 42, from Galashiels, and was admitted March 23d, 1854. His general health was good, and the popliteal tumor was about the size of a hen's egg. Next day, Carte's compressor was applied on the femoral at its upper and lower portions. The pressure was moderate, and antiphlogistic regimen was enjoined. On the 27th, the upper compressor was removed, in consequence of the complaint of pain; and on the 5th of April, it was noted that there was much pain, swelling, and œdema of the limb. A lump of lead, with an elastic band attached, as used in the Dublin hospitals, was now tried.

August 1st.—Seventeen weeks since the commencement of the treatment, the tumor was harder and slightly diminished in size; pulsation was distinct. Flannel was ordered to be applied to the limb. The lead weights had up to this time been kept constantly applied above, and Carte's apparatus to the lower part of the limb.

3d.—The patient suffered much; anxious to have the artery tied. Carte's apparatus alone was now kept applied at night.

10th.—Pressure was abandoned; the tumor was harder, but still pulsating, becoming caudate towards its head, and increased in size towards the inner side.

24th.—Five months after admission, the artery was tied. The parts in its neighborhood were found more matted together than usual. At 8 p. m., a slight thrill was perceptible in the tumor. There was sickness from the chloroform. Pain of the back was complained of.

25th.—The thrill was still less. Colchicum was given internally; and chloroform was applied locally to the back.

26th.—The thrill was scarcely to be felt; and on the 27th it was gone.

30th.—The thrill had returned; and on the 15th September, it was noted that the thrill was still present; the ligature was yet in the wound; it came away on the 18th.

October 10th.—The tumor was at length silent, and diminished in size. The patient was dismissed on the 14th.

2. *Dr. Johnson's Case.*—The patient in this case was admitted into the Montrose Infirmary, March 24th, 1854. The tumor was about the size of a small orange, and had been first noticed in the previous July, and gradually increased in size. The pain, at the time of admission, was severe, the symptoms well-marked. The health was good, and the heart sound. Low diet, &c., was ordered, and digitalis given internally. Carte's apparatus was applied at intervals, and soon another instrument alternately with it. Up to the 16th of August, the tumor had become flattened, and diminished in size to that of a walnut. The pulsation was weakened, but was still apparent. The health now began to flag, and on the 23d, a ligature was applied. Slight pulsation was felt in the tumor on the 28th, but never returned. The ligature came away on September 14th; and on the 15th of October, the patient was dismissed from the hospital. Dr. Johnson attributed the successful issue to the fact of the pressure employed having developed the collateral circulation of the limb.

3. *Dr. Moore's Case.*—Lawrence Hyland, æt. 36, an Irishman, but has lived in England some years; a navigator, and accustomed to wheel great weights up inclines; a strong, well-made man; middle height; weight twelve stones.

General health always good; never recollects having had a fall or sprain; of sober habits.

About thirteen months ago, he felt pain behind the right knee, which used to come and go; and he perceived a small swelling behind the knee, the size of a marble.

About four months ago, the pain became more settled and continuous, and the lump began gradually to increase, but did not prevent him following his usual avocations until five weeks ago, when the pain became excessive, and the swelling, from its increased size, prevented the bending of the knee.

SURGERY.



Admitted, August 9th, into the Infirmary of the Doncaster Union. Present state: A large aneurismal swelling occupies the lower and outer side of the right thigh, extending from the upper part of the popliteal space downwards and outwards to near the head of the fibula. Strong pulsation is distinctly felt along its whole course, and a very loud rasping murmur heard over every part of the tumor. Pressure on the femoral stops both the pulsation and murmur. It is compressible, but cannot be obliterated. The leg is very œdematous, and its veins turgid. Temperature the same as that of its fellow. Sensibility to external impressions is lessened; but he complains of most severe pain along the inner and front part of the leg, from the knee to the foot, and this is much increased by exposure to cold. There is no discoloration over the aneurism. Heart's action healthy. No signs of aneurism elsewhere. Countenance expressive of great suffering; pulse regular; general health in other respects good.

Ordered to remain in bed; to have an aperient; low diet; and, as he complains of sleepless nights, five grains of Pil. Sapon. c. Opio.

Upon consultation, it was determined—although, from its great size, and thinness of its walls, it was not a promising case—to try compression, which was commenced.

August 18th.—He is much lower than on admission. Nights sleepless from severe pain. The œdema of the leg is very much less. There is an erythematous blush over the lower part of the aneurism, and here it is most tender.

Ordered house diet. To drink as little as possible, and take Potass. Acetatis, ʒss; ter. quotidie.

In commencing the compression plan, much attention was paid to details. The sheets and blankets were sown to a firm mattress, which, again, was secured to the bed-stocks. A foot-board, with a pillow, were added as a support for the left foot, and a firm cushion fixed for the right leg to rest upon.

The thigh and pubes were shaved, and well sprinkled with flour; this last was done several times each day. Ward's aneurismal compressor was applied to the femoral, about five inches below the pubis. This to be alternated with pressure, made by means of a four-pound weight on a tourniquet pad, applied to the groin. A large cradle was placed over him, and he was instructed how to govern the pressure, which was not to be carried to the extent of wholly stopping pulsation in the aneurism.

Seven hours after its application, the limb was œdematous. He had kept the pressure up nearly the whole of the time, but the instrument had repeatedly slipped. He expressed himself as feeling much easier when the pressure was over the artery, and is most anxious to carry out the instructions given. The compressor was re-applied; the four-pound weight to the groin to be substituted for it at bed-time. At his request, an opiate was given.

19th.—Has slept about four hours, and had the four-pound weight on at intervals to about the extent of half the night. Complains of pain down the shin-bone, and a sensation of pins and needles in the foot. Says he has less pain than when admitted. Pulse strong; there is some febrile excitement. He wore the instrument about nine hours during the day, changing it for the weight, the thigh being rather tender from the pressure of the clamp.

20th.—Rested badly, but kept the weight on most of the night, as it does not give him much pain. He cannot bear the clamp, the thigh being so tender. There is a good deal of œdema of the leg. Pulsation in the aneurism not quite so strong. Pulse quick and irritable; urine scanty; bowels constipated.

Ordered a dose of calomel and colocynth, with an aperient draught four hours after; only to wear the weight, and that at intervals of an hour.

21st.—Passed a restless night. There is œdema of the leg, and much pain and a swelling is seen on the inner side of the knee, which pulsates. Wore the weight most of the night. Pulse 100, irritable.

Compression to be stopped until night, and the leg bandaged.

R Sodæ Tart., ʒss;
Tinct. Digitalis; Sp. Æth. Nitrici, aa, xxv
Aqua, ʒi;
Ft. haust. 3tiis horis sumend.

22d.—No sleep. Had the weight on for an hour at a time, with intervals of half an hour. Edema of leg less, but the swelling on the inside of the knee much increased; pulsates strongly; is painful and tender.

There is diminished sensibility of the foot. He describes a burning feeling from the knee to the foot, and thought in the night he had lost part of his leg. Pulse quick and irritable; tongue furred; great restlessness. It was now feared that the aneurism would run on to suppuration. Compression to be given up, and the artery tied on the 24th, if the irritative fever be less.

The artery was tied at the time mentioned, and the patient went on well, as it seemed, until the 27th, when symptoms of gangrene made their appearance in the leg. Amputation at the upper third of the thigh was performed on the 31st, but the patient continued to sink, death happening thirteen hours after the operation, and being determined, or at least hastened, by a secondary hemorrhage, which had taken place about two hours previously.

4. *Mr. Teale's Case.*—September 10th, 1854.—William Haley, of Bawtry, æt. 35, a coachman in a gentleman's family, was admitted into the Leeds Infirmary, on account of an aneurism of the right popliteal artery. He is a thin person, of middle stature, rather pale, of a tranquil and somewhat feeble circulation, of good general health.

About four months ago, he was standing in a cart, having the right ham resting on the edge of the cart, and the leg hanging over outside. While in this position a box of books fell upon the knee, and violently pressed the ham against the side of the cart. This accident was followed by pain and stiffness in the knee. In two months afterwards, a small, pulsating tumor was felt in the ham, which steadily increased until the present time. It now feels about the size of a hen's egg. The circumference of the affected knee is 15 inches, that of the sound knee, 13½ inches.

12th.—Mr. Teale ordered compression to be made in the course of the femoral artery by means of Signorini's tourniquet; the pressure to be discontinued at nights, and to be occasionally intermitted for short periods during the day, and to be practised to such a degree as greatly to mitigate the force of the circulation, but not absolutely to arrest pulsation in the aneurism; the seat of pressure to be frequently varied in the course of the artery. The patient to have meat daily, without beer, and to be kept in bed.

15th.—Pulsation much diminished, and the tumor smaller. He feels much easier.

19th.—Tumor smaller and firmer; circumference of knee, 14½ inches.

24th.—Tumor much smaller, feeling perfectly solid. A very slight pulsation may be felt in the course of the tumor, but it is doubtful whether this pulsation is in the aneurism or in a small artery passing over its surface. For greater security, in this state of doubt, the pressure is directed to be continued a few days longer.

26th.—It is now evident that the slight pulsation felt on the 24th was due to an arterial branch in process of enlargement, and not to the aneurism, which, may, therefore, be considered as cured on the 24th, or twelve days after the commencement of the treatment. The pressure is now to be discontinued.

The following table, accurately recorded by the patient, shows the duration of the pressure each day:

Sept. 12th	9 hours.	Sept. 20th	18 hours.
" 13th	12 "	" 21st	18 "
" 14th	18 "	" 22d	18 "
" 15th	12 "	" 23d	18 "
" 16th	12½ "	" 24th	18 "
" 17th	12½ "	" 25th	18 "
" 18th	18 "	" 26th	6½ "
" 19th	18 "		

5. *Mr. Stubb's Case.*—Michael B—, æt. 36, a strong, healthy-looking Irishman; admitted in the Liverpool Infirmary on 3d of October.

The patient is a plasterer-laborer, and has frequently been employed to carry weights up and down stairs. About three weeks ago he perceived a stiffness

in the left leg; this stiffness continued, and was felt most at night and in the morning; after a little exercise it subsided. At the end of the first week after the commencement of the stiffness, he experienced pain in the leg, and increased inability to move it. The pain has continued, more or less, up to the present time; it has been most severe at night, and sometimes so as to prevent him sleeping. About the same time that he felt the pain, he perceived a throbbing in the ham, and found a tumor existed there. He thinks there has been no increase in the size of the tumor since he first discovered it.

There is a slight œdema of the left leg; in the left popliteal space there is a distinct, firm, and hard tumor, about the size of an orange: there is distinct and strong pulsation felt all over the tumor, and a loud *bruit de soufflet* heard over every part of it. Pressure on the femoral artery stops the pulsation; pressure on the tumor diminishes its size, and causes pain. The heart sounds are normal; pulse strong 72.

The patient was put on low diet; the thigh was shaved; and the leg, being bandaged from the toe to above the knee, was placed on a pillow. On October 3, pressure of the femoral artery at the upper third of the thigh was commenced, the horse-shoe tourniquet being applied for four hours. From this date up to the 21st, pressure was kept up alternately with the clamp and horse-shoe tourniquet, the site of the pressure being frequently changed. It was found, however, that when left, the patient would unscrew the instruments, and he complained much of the pain they produced. An opiate was administered at night, and occasional doses of Pulv. Jalapæ Co. were given, low diet being still enjoined. On the 18th, it was observed that the pulsation of the tumor was less, and the leg could be more easily flexed. On the 19th, the leg was placed on a double inclined plane, being carefully bandaged from the toes, and a pad placed firmly in the ham.

21st.—An artery can be felt pulsating at the inner side of the patella. In consequence of the pain produced by the instruments hitherto used, a Carte's tourniquet was substituted for them to-day.

22d.—He complains of no pain from the application of the tourniquet, and says, in every respect, he feels much easier than before. To take 4-ounces meat four times a week.

24th.—The pressure on the artery is kept up constantly; the pulsation in the tumor is considerably less; there is no œdema of the leg nor turgescence of the veins.

26th.—Pulsation diminished; tumor smaller; an artery is felt pulsating on the posterior and outer side of the tumor; the pulsation of the artery on the inner side of the patella has increased; tourniquet kept constantly applied, the position of the pad being changed from time to time; he is able to bear the pressure of the instrument for a whole day on one spot without pain; leg still kept on double inclined plane; there is no irritation of the skin.

31st.—No pulsation in the tumor; that of the anastomosing vessels about the knee more distinct; tumor decreasing in size.

Nov. 2.—Leg taken off the double inclined plane; the tourniquet was kept applied so as slightly to control the circulation till the 5th, when it was removed.

On the 17th the patient was discharged quite well, and able to walk about as usual.

6. *Mr. Ferguson's Case.*—This case was treated in King's College Hospital in autumn last.—A. B., aged 22, married. She always enjoyed pretty good health. The first symptom of her disease occurred twelve months ago: this was pain, confined to the popliteal space of the left leg; she could assign no reason for its coming on, as she never had any accident to that leg. The pain, which has lasted to the present time, occurs in paroxysms of variable length, sometimes lasting for a whole day, and at other times not an hour, and accompanied with intervals of perfect ease. The pain is always aggravated by exercise, or by merely extending the leg. It has never been bad enough to prevent her following her ordinary occupation. Soon after its first occurrence, she noticed a hard, throbbing tumor, the size of a hazel-nut, in the centre of the ham; it was not tender to the touch, although it seemed to be the seat of pain. It has remained almost unchanged since its first appearance; the only alteration that has taken

place is a trifling increase in its size. It is quite firm and pulsating. Pulsation is completely arrested, if the superficial femoral be compressed. A bruit is heard on applying a stethoscope to the tumor.

Mr. Ferguson applied the Carte's compressor to the common femoral immediately below Poupart's ligament, regulating the force to such a degree as to keep up an amount of pressure just sufficient to stop the pulsation in the tumor. It was continued for twenty hours, when some uneasiness being complained of, it was omitted for an hour or two, and then re-applied. On the third day the pulsation was not so full or throbbing as before. On the ninth day the pressure was modified to such an extent, sufficient to weaken, but not completely to arrest, the flow of blood into the artery. On the fourteenth day, the woman not feeling at all well, all pressure was removed for a few days. On the nineteenth day it was re-adjusted, but, in the evening of that day, the pulsation in the tumor became feeble in a marked degree, and some slight pain was complained of in the ham. On the twenty-first day all pulsation had completely ceased, and the tumor was found diminished in size, and of considerable hardness. It was now evident that a cure was effected; and no return of the disease has as yet shown itself.

The most interesting point in the treatment of this case is the rapidity and easiness with which this disease was cured; and it also well illustrates the fact, that it is not always absolutely necessary to make continuous pressure on the artery for any length of time.

7. *Dr. Collie's Case.*—Christopher Toole, æt. 32, by trade a nailer, a tall, athletic man, of dark complexion, presented himself among the extern patients at the Meath Hospital, on Monday, July 24, 1854, with a pulsating tumor on the upper part of the right thigh. This tumor was $4\frac{1}{2}$ inches long, and $5\frac{1}{2}$ wide; the circumference of the limb over the centre of the tumor was $21\frac{1}{2}$ inches, that of the corresponding part of the sound limb being $18\frac{1}{2}$. It occupied the upper part of Scarpa's space; its upper margin was in contact with the depression which marks the position of Poupart's ligament, and it extended downwards along the course of the common and superficial femoral vessel. The pulsation was very strong and diastolic, and the action of the artery above it was so forcible as to lead some persons to conclude that it was considerably dilated; by pressing upon the abdomen firmly, we could trace the pulsation in the external iliac for a distance of nearly four inches. The superficial veins of the thigh were remarkably large, knotted, and tortuous; the glands in the groin were somewhat swollen; and upon the outer aspect of the tumor, two glands could be felt, elongated and flattened, and partially sunk into it; the entire limb was enlarged, slightly œdematous, but of natural temperature and sensibility. There appeared to be some solidification of the tumor on its outer margin: subsequent observation showed this to be at least partially deceptive, and resulting from the varicose condition of the veins on the internal side. Pressure upon the artery in the groin readily checked all pulsation, but without any sensible effect upon the volume of the tumor. No bruit de soufflet was audible in any position, nor was there any fremitus; the whole arterial system was excited, and the man complained greatly of the throbbing; even the momentary pressure of the thumb upon the artery gave him great relief. He stated that his general health was good, and that for the last two years he had been temperate; his occupation rendered stooping necessary, and also constant rotation of the body at the hips, the feet being kept unmoved. The floor of his workshop was uneven, and his right foot had for some weeks rested habitually on a lower level than the left. The tumor made its appearance, as far as he was aware, spontaneously, about six or seven weeks before his application at the hospital; it was then about the size of a nut, and had ever since grown steadily larger.

Tuesday, 25th.—After administering purgatives, &c., compression was attempted; various instruments were tried, by none of which could the artery be commanded, even partially, for more than a minute or two. The only point available for pressure was just above the sac, at the spot where the epigastric and circumflex vessels are given off. As the brim of the pelvis is rounded just at this place, all the instruments were displaced by the ordinary respiratory movements, and slipped off the artery; a relay of pupils kept up pressure, some

times by the finger, and sometimes with the clamp or leaden weight; but it was partial and irregular, in spite of the greatest vigilance and anxiety on the part of all, including the patient himself. Low diet was strictly enforced, and purgatives of croton oil were occasionally exhibited. Quiet was procured by opiates. Chloroform was administered once, but produced excessive headache. An attempt was made to draw some blood upon the second day, but it was thick and carbonaceous, and would not flow. On Saturday, after upwards of four days' ineffectual attempts at compression, the skin in the groin began to chafe and suppurate round the root of every hair, and it became evident that pressure could not be borne much longer; the aneurism had increased half an inch upwards and downwards, and the pulsation was as violent as before, compared with the general force of the circulation; no attempt at consolidation had taken place, and all parties were inclined to be disheartened.

On Sunday, the 30th, I determined to make another effort to command the vessel completely. Having procured a double clamp tourniquet, which closed by a screw at the hinge, I applied it, placing a small roll of bandage an inch thick under the pad. I screwed it home, and found that it controlled the pulsation for a moment, and, like all the rest, slipped off towards the abdomen. By screwing it a little tighter, and drawing it downwards by a tape from the knee, I was enabled at last to get the artery completely controlled. Before finally adjusting it in this position, I drew up the skin, so as to get an unchafed part under the pad. The tourniquet was not disturbed for thirty hours, and at the end of this time, upon slackening it, all pulsation was found to have ceased in the tumour, and in the artery as high as it had been traced before, namely to the spot where the common iliac bifurcates.

About twelve hours after the tourniquet was applied, the man felt a stinging pain on the inside of the knee and leg, and a kind of tingling sensation along the outside of the hip and thigh. While under pressure, he took a couple of sedative draughts, containing half a drachm of chloroform.

The spot of skin where pressure had been first attempted was beginning to slough in points, but in a few days it became healthy. The tumor became a little smaller in the first few days, although the subsidence of venous congestion and œdema gave it a more prominent appearance. He never had the smallest pain nor single bad symptom after the removal of the clamp; and upon the 12th of August, he got up and walked about the ward.

On the 16th, he left the hospital, and returned almost immediately to his work, having been in hospital twenty-three days; nor would it have been necessary to keep him so long but for the slough of the integument caused by the first abortive attempt at compression. I saw him on the 6th of October, and found the tumor reduced very considerably in volume; the difference between the circumference of the two limbs was less than one inch.

There are some points of general interest in the last case to which Dr. Collis is wishful to draw attention. These are:

"1st. The position of the point of pressure as regards the sac and as regards the collateral branches. The artery was compressed close to the sac; the point of pressure covered the usual origin of the superficial circumflex ilii and epigastric vessels, the latter of which could be felt pulsating before treatment was commenced; hence the nearest collaterals were practically the internal iliac on the one side, and the profunda on the other, and pressure was thus made between the sac and one of the next collateral branches.

"2d. The fact that under these circumstances the aneurism increased in size, as long as pressure was incomplete, and upon the artery being completely controlled, coagulation was rapidly obtained.

"3d. The simultaneous blocking up of the artery above the point of pressure, as high as the next collateral branch.

"4. The non-occurrence of secondary aneurism, or of suppuration of the sac.

"5th. The bearing of this case upon the question of pressure at the distal side."

* * * * *

"This case seems to suggest the possibility of curing aneurism by distal pres-

sure, under favorable circumstances. If we can effect the consolidation of an aneurism by converting it into a *cul de sac*, there is reason to believe that, with due regard to preparatory treatment, this result might in some cases be obtained by choosing a spot between the sac and the distal collateral branch as the seat of pressure. We see in this case that not only the sac was filled up, but the artery also, which was exposed to the pulsatile wave of blood. When pressure is made on the distal side of an aneurism, we observe an increase of impulse for a few moments. If the pressure is *complete, and firmly kept up*, this momentary irritation subsides, and the aneurism pulsates with perhaps less force than before. This principle of converting the aneurism into a *cul de sac* appears to act occasionally in compression at a distance. Dr. Carte, who has had great opportunities of observing the various phenomena which arise during the cure of aneurism, has stated to me as his conviction that many, if not all, of the rapid cures are effected by a loose clot blocking up the distal portion of the artery. Certainly we can scarcely conceive it possible that a cure which occupies seven, ten, or even thirty or forty hours, could be effected by the slow process of a deposit, layer by layer, until the sac is filled. We see, also, that a similar result has been obtained purposely by manipulation of the sac, a process which is too dangerous to be other than exceptional in application. From all these circumstances, therefore, I think we may infer the probability of distal pressure being occasionally useful; it is at least worth a trial, where the position of the sac prevents our using the ordinary method; and if we can get a point for compression between the sac and the nearest collateral branch, I think the result of the case which I have now put upon record will give us encouragement, although indirect, to hope for success."

ART. 60.—The treatment of Varices and Aneurisms by galvano-puncture.

By Dr. STEINLEIN.

(*Zeitsch. der G. der Aerzte*, Wien, 1853; and *Medical Times and Gazette*, Dec. 16, 1854.)

Baumgarten and Württemberg, after the fact announced by Schuh, that coagulation is produced more promptly at the positive than the negative pole, instituted experiments upon the action of the poles taken separately. They obtained the following results:

1. If the negative pole was introduced alone into a vessel, the positive being applied against the neighboring parts, there was no coagulation. 2. The two poles introduced into the vessel produced slow, feeble, and rarely complete coagulation. To turn these results to use, it becomes necessary to inquire—What is the action of the poles upon albumen, fibrin, &c.? M. Steinlein has undertaken this, employing Grove's battery, with poles of platinum and zinc; the first positive, the second negative. The experiments upon albumen gave the following results: 1. If two conductors of platinum are plunged into a solution of albumen, no coagulation is produced, and test-paper shows no reaction. 2. If the platinum needle of the positive pole is replaced by one of steel, little bubbles are disengaged from the negative pole, forming a thickish layer; the reddened test-paper, applied to the platinum needle, becomes blue; the steel needle at the positive pole becomes slowly covered by coagulated albumen, with no disengagement of bubbles. This needle also becomes bromo-colored. 3. If a zinc needle be used, instead of one of iron or steel, the coagulation is much more rapid.

It follows, from these experiments, that the coagulation of albumen takes place only at the positive pole, and that the coagulating force varies according to the nature of the metal employed. The author then endeavors to explain these results according to physical and chemical laws, and he advises, in acupuncture, that the steel needles should be superseded by those of zinc, or rather by needles covered by a layer of this metal. The galvano-puncture should then be practised in the following manner: A certain number of needles, connected with the positive pole of a galvanic battery, are inserted into the tumor, whether the sac of an aneurism or the cavity of an aneurismal varix. The negative pole should be supplied with a plate of platinum, which must be put upon the skin

adjacent to the aneurism, after having augmented the conductivity of the epidermis by moistening it with a saline or acidulated solution.

ART. 61.—*A new Hæmostatic Agent.*

By M. ARMAND, Surgeon in the French Army.

(*Medical Times and Gazette*, June 20, 1854.)

While the eau Pagliari was being subjected to experiment as a hæmostatic agent, M. Monsel, attached to the Army of Occupation in Italy, proceeded to a chemical analysis of this fluid, the composition of which was still secret. From his first trials, the reactions made evident the presence of the sulphate of alumina and potash, associated with an organic matter, the odor of which resembled that of vanille. M. Monsel then thought that, on treating the balsam of Peru—which, as is generally known, possesses a strong odor of vanille—with the subcarbonate of soda, and throwing the residue of the treatment into a solution of cubic alum, he could obtain an alum charged with a principle identical with that of the analyzed water. This having been verified, he determined to test by the same treatment the resin of the gum benzoin, and the balsam of tolu. The results being the same, he came to the conclusion that the unknown fluid consisted of benzoic acid dissolved in alum. Having formed a hæmostatic agent in his opinion similar to the eau Pagliari, he proceeded to test its coagulating power experimentally. On the 27th of last May, he and M. Armand, accompanied by MM. Renard, Monier, Doin, and Bennet, went to the quarter of the Gate of the People, to the Infirmary of M. Broquet, Veterinary Surgeon to the 3d Regiment of Artillery, who, having a glandered horse about to be killed, had given it, *pro salute hominum*, for the experimental purposes required.

Application of the Hæmostatic Agent prepared by M. Monsel to the Facial Artery of a Horse.—Experiment 1. The animal having been shackled and thrown down, the left facial artery was exposed on the inferior maxilla in front of the masseter, and was opened by a longitudinal incision of four and a half lines. The arterial jet having filled several glass tubes, each holding about half an ounce, a sponge soaked in the hæmostatic agent was put upon the wound, and held there by tight compression. The imbibition was often renewed during a quarter of an hour. The hemorrhage recommenced when the compression was relaxed. It being thought that the violent plunges of the animal interfered with the success of the experiment, the sponge was introduced under the integument, which was then tied over it by sutures; the animal was raised, and the head tied high to a manger. From this moment no further bleeding ensued.

The blood in the glass tubes.—Into the tubes, before the addition of the blood, there had been poured half an ounce and ten minims of both the eau Pagliari and of Monsel's liquid. Coagulation took place equally rapidly in the two sets of vessels.

Employment of the same fluid on a Dog.—Experiment 2. Having ascertained on the day following (May 28) that the hemorrhage was definitively arrested in the horse, whose head was still maintained in the same position, a large superficial wound was made in the inner part of the thigh of a middle-sized dog. The solution, applied by means of a sponge, formed a clot in ten minutes; and, by the tight adjustment of a circular bandage, the hemorrhage was definitively arrested.

A few minutes afterwards, a large and deep incision was made into the right thigh of the same dog, and a profuse flow of blood in jets issued from the femoral artery. The hæmostatic agent was applied to the gaping vessel directly by means of a tube; but it failed to arrest the bleeding. Compression was then made at the bend of the thigh upon the vessel, and the soaked sponge, held to the wound, sufficed, as in the former trial, to stop the flow of blood in ten minutes. A tight bandage was applied, and the dog was permitted to rise. The animal licked its wounds, and crouched under the table; but there was no return of the hemorrhage, as was half expected by those about. The day following (29th) the dog was alive, to the great surprise of all; and it was seen, from the spot where he lay, that no bleeding had taken place during the night. M.

Renard then exposed and opened the carotid artery, and treated the wound in a similar way with equal success.

Autopsy of the Dog.—The animal, whose exhaustion was extreme, died, and was examined. The end of the femoral artery (which vessel had been completely cut through) was obliterated by a plug of coagulum, of red color, and two and a half lines long. In the neck, an oval red clot, the size of a nut, was implanted by a pedicle into the carotid artery; this pedicle extended upwards and downwards to some extent within the vessel. The prolongation towards the brain was in the form of a T.

The carotid artery was opened and simply plugged in another dog. Hemorrhage was temporarily arrested by these means; but owing to the movements of the animal, the wound re-opened; the bleeding recommenced, and terminated fatally. Upon examination, no clots were found in the wounded vessels.

Continuation of the experiment on the Horse.—On the fourth day the dressings were removed, and there was no return of bleeding, no functional disturbance.

June 9.—The animal was killed. The facial artery was obliterated, but was found, together with the vein, the nerve, and Stene's duct, imbedded in a quantity of lardaceous matter, the result of the glanders, which had been preceded by farcy. The other morbid changes were, thick white pus in the left frontal and maxillary sinuses; hypertrophy and ulceration of the mucous membrane in those sinuses; ulceration of the pituitary membrane of the same side; miliary albuminoid tubercles in the lungs, the spleen, and the liver.

Employment of the same liquid on Man.—Hôpital St. André; service of M. Jaquot.—Experiment 4. Profuse hemorrhage having flowed from the recently cut edges of an old ulcerated bubo in the groin, M. Geoffroy tried in vain to arrest it by means of the ordinary compress. A pledget of charpie, soaked in the hæmostatic liquid by M. Monsel, and placed upon the part, instantly and definitely stopped the bleedings.

Two similar and equally successful trials were made also by M. Renard upon patients in the same hospital.

M. Monsel is pursuing his investigations still further, with an energy which does him infinite credit. Upon adding ten grains of tannic acid, and a scruple of alum deprived of its iron, to an ounce and a half of rose water, he obtained a fluid very efficacious in coagulating the blood issuing from an open vein.

ART. 62.—How to arrest Hemorrhage from a burst varix.

By Mr. ADAMS, Surgeon to the London Hospital.

(*Medical Times and Gazette*, Dec. 16, 1854.)

In these accidents the bleeding is from the *proximal* end of the vein. The valves between the injured spot and the heart are either imperfect or absent, and the coats of the vessel having given way, there is nothing to bear the column of blood above the part. Bleeding must continue, therefore, so long as this column continues to press upon the wound; and it must cease if *the leg be elevated*. These remarks were made recently at a bedside in the London Hospital.

(E) CONCERNING FRACTURES AND DISLOCATIONS.

ART. 63.—Ununited Fractures, &c., treated by subcutaneous drilling of the ends of the bones. By Dr. BRAINARD.

(*Trans. of American Medical Association; American Quarterly Journal of Medicine*, Jan. 1855.)

The object of this essay is (1) to establish by experiment the principles upon which the treatment of ununited fractures should be conducted; and to show that these principles are applicable to the human subject. 2. To propose a new method of treatment for certain deformities which result from true ankylosis, union of fractures in an angular position, rachitic curvature, &c.

The essay is divided into three parts. 1. Experimental researches on the effects of foreign bodies when allowed to remain in contact with the osseous tissue, and on certain wounds of the bones. 2. Treatment of ununited fractures by subcutaneous perforation of bone, with cases; and 3. Treatment of deformities of the bones by subcutaneous perforation, with experiments.

From the facts detailed in the first part, Dr. Brainard considers that the following deductions are fully justified:

"1. Foreign bodies of every kind, placed or allowed to remain in contact with any part of a bone, in a manner to keep up suppuration, produce absorption of it, and have no tendency whatever to give rise to the production of callus. The use of setons, pegs, wires, and foreign bodies of every description, as a means of promoting the formation of callus, is a practice not founded on correct principles, and is often dangerous. The seton is more properly employed for the purpose of dividing a bone, or keeping up a false articulation, than for uniting it.

"2. Sequestra and foreign bodies imbedded in bone, may be brought to the surface when, by perforation or otherwise, instruments or ligatures can be so attached to them as to draw them permanently, with but a moderate degree of force, in that direction. As soon as they press against the living bone, they cause its absorption in the direction towards which they are drawn.

"3. That power of absorption of bony tissue attributed to the periosteum and the medullary membrane, exists also in the substance of the bone itself, as is proved by the insertion of pegs into perforations of bone; absorption taking place around them, not only at the surfaces, but at all the intervening points. We have employed the term absorption, in accordance with received usage, to indicate that enlargement of the perforation which takes place around the peg, although it is not certain that the bone is absorbed. It is quite as likely that it is disintegrated by ulceration."

In chapter II. Dr. Brainard inquires into the effects of foreign bodies on the formation of callus. The facts he presents in elucidation of this subject, justify, he considers, the conclusion, that foreign bodies which keep up suppuration, not only prevent the formation of callus to a certain distance around them, but produce absorption of callus already deposited when placed in contact with it. The practical deduction may be drawn, he remarks, that setons, pegs of ivory, &c., are suitable means to be employed for promoting the removal of deformed callus and certain exostoses.

Solutions of iodine injected between the extremities of fractured bones, with a view of producing union, Dr. Brainard has found to act like foreign bodies—to produce inflammation and necrosis, and to prevent the formation of callus.

After a consideration of wounds of bones, and the circumstances in which they give rise to callus, or union without it, and the state of the parts in ununited fracture, Dr. Brainard proceeds to the treatment of ununited fractures. His own plan of treatment, is (by means of an instrument with a point somewhat awl-shaped, but more pointed in the middle, with the view of avoiding as much as possible the formation of chips), to produce wounds of the fractured ends of the bones, transfixing at the same time whatever tissue may be placed between them. After transfixing the fractured extremities and intervening tissue in one direction, the instrument is to be withdrawn from the bone, but not from the skin, its direction changed, and other perforations made in the same manner. Dr. Brainard thinks it better to commence, in most cases, with not more than two or three perforations, in order that the effect produced shall not be too severe. On withdrawing the instrument, collodion is to be placed upon the point of puncture.

"Each of the different parts of the operation is," according to Dr. Brainard, "essential to its success. The division of the tissue situated between the fragments, would, of itself, have but little effect; combined with scratching their extremities, its effect is not great, as we have demonstrated by experiment; but, when accompanied by wounds of the bone, there is a very permanent and efficient action produced, which puts the extremities in a condition to join the soft parts in effecting union. This can be rendered greater by increasing the number of punctures, or using an instrument of large size. The operation is to

be followed by the application of suitable splints, or apparatus for the purpose of securing immobility. It should be repeated from time to time, and carried to a greater or less extent, as the effects produced may indicate."

To prevent the danger of the perforator passing too deeply, slipping from the surface of a bone, or injuring any vessel, Dr. Brainard has devised a means for regulating its action. This can only be understood by a reference to the drawing given of it, and the accompanying description.

Chapter IX, treats of the application of perforation of the bones to the cure of certain deformities, by means of interstitial fracture, or bending. The cases in which it is proposed to apply it are:

"1. Perfect ankylosis by bone, or fibrous adhesions too firm to be separated by moderate force, and where the member is in a position to be useless. In this case its use is recommended with a view of straightening the member, where the original disease has been entirely removed.

"2. Fractures united in such a position as to render the limb useless, or from angularity of the fragments, greatly to incommode the patient. In this case, it is also employed for the purpose of straightening the member, after consolidation is perfect.

"3. Deformity from rachitis, and mollities ossium, where the disease giving rise to the deformity has been perfectly cured.

"4. For the purpose of facilitating the fracture of the femur, and formation of a false joint, in case of ankylosis of that bone with the pelvis.

"The method of applying the treatment will depend upon the object to be obtained. When it is required to weaken the bone as much as possible, in order to facilitate its fracture, it will only be necessary to perforate it several times in one direction, and then, withdrawing the instrument, to repeat the perforation from another point.

"The inflammation thus excited will, in a few days, soften the bone sufficiently to render its fracture very easy.

"If it were desired to effect but a partial fracture, the perforations and weakening should be made mostly on one side, and the same rules followed as in the other case.

"When the object is merely to bend the bone, Dr. Brainard would recommend that the perforations be made at three different points, and repeated from time to time with instruments of smaller size, until the enlargement and softening have thoroughly been effected, and then the gradual application of force, by means of a suitable apparatus, making superficial perforations to soften the surface and prevent the danger of fracture."

In addition to the application of this method, as above described, Dr. Brainard has employed it for simple perforation of bone, in inflammation tending to abscess. In a case of this kind, where the disease was situated on the internal surface of the tibia, below the knee, two perforations gave relief from a violent pain, without giving rise to suppuration.

Dr. Brainard lays no claim to originality for the treatment of ununited fractures described by him. He acknowledges that several surgeons have sought to attain the same end; but no one of them, so far as he knows, has "either demonstrated the principle upon which it reposes, or laid down the rule by which it should be performed, or contrived an instrument by which it could be carried into effect with safety and facility." It is his hope that the operation he proposes will be "regarded as an improvement"—and that, "as an attempt to apply the principles of physiology to practical surgery, it will meet with the favorable consideration of the profession."

ART. 64.—*Ununited Fracture treated by support and exercise.*—By Dr. SMITH, Lecturer on Clinical Surgery in the Philadelphia Hospital.

(*American Quarterly Journal of Medical Sciences*, Jan. 1855.)

Dr. Smith objects to all the modes of treating this accident at present in use, as founded on a wrong principle. He objects particularly to the idea that absolute rest is necessary to the cure, and thinks that this idea is one very fruitful cause of failure. His plan is to fix the limb in an iron framework, very like

those in use for rickety children, having joints to allow the movements of the limbs, and straps and pads to steady the extremities of the broken bones in a proper position. Fixed in this apparatus, he allows the patient to use his injured limb, and the result, he tells us, is that union is effected with much less constitutional and local disturbance than by means of the various plans of treatment at present in use—violent friction, the seton, resection, Dieffenbach's plan, and the rest—while at the same time the patient is less exposed to phlebitis and other risks, he escapes that which is harder to bear than anything else, namely, the confinement.

This plan has been tried in several cases, and with these results:

	Cases.	Cured.	Relieved.	Failed, but able to walk.
False joint in the femur . . .	4	3	—	1
“ “ leg bones . . .	8	7	—	1
“ “ humerus . . .	2	—	2	—
Total . . .	14	10	2	2

Dr. Smith gives the details of several of these cases, and of them the following will serve as illustrations:—

CASE 1.—*False Joint in both Bones of the Leg, of ten months' standing, cured whilst walking about, by the use of the Artificial Limb.*—Account furnished by Dr. Wm. Waters, of Frederickstown, Md.—Mr. S—, æt. 35, had received a compound comminuted fracture of the tibia and fibula, on the 4th of September, 1849. The accident occurred from the wheel of a tender to a locomotive passing over the right leg obliquely, about two and a half inches below the knee, comminuting somewhat the tibia and fibula, and piercing the soft parts nearly opposite the injured tibia. The fracture of the tibia was obliquely inwards, about two and a half inches below the insertion of the ligamentum patellæ. In passing my finger into the wound (it could be introduced opposite the spine of the tibia, and carried around the face to the under surface of the bone), some comminution of the fracture could be ascertained in the lower shaft, but there was very slight displacement of the ends, as one slab or piece, which could be felt depressed slightly beneath the lower shaft, was raised with my finger to its place. The foot was of the natural temperature five hours after the accident; the dorsalis pedis and posterior tibial arteries were very feebly felt; but his pulse was pretty good and firm, though somewhat enfeebled. He had some fever for a week or more, and suppuration, and a slough about the size of a large pear occurred over the fractured shafts of the bone, which resulted in necrosis, exfoliation of the surfaces, and caries of the ends of the bone until April, 1850. In February, the immovable apparatus was applied, and subsequently a carved splint fitting the outside of his leg was fastened by a roller on the entire limb. Injections of nitrate of silver to the tibia were also tried. About twelve months after the accident, a seton was passed between the shafts of the tibia, the fibula having united in the early stage of the case. The leg was splintered for months; the seton was withdrawn, or rather it cut itself out in four weeks, on the principle of Lourme's modification of Physick's plan; this also failed. During November and December, 1850, acupuncture was also used to excite inflammation in the part, the patient's health being good at this time, from previous generous diet and tonics. My patient now became anxious for excision of the fibro-cartilaginous ends. But the pseudarthrosis being near the knee-joint, the loss of bone from the block to be removed would have been at least from one and a half to two inches in width, and would have encroached upon the ligaments on the inside of the knee. I therefore prevailed upon him to try an apparatus like yours in the case reported in Vol. XV. New Series, of the *American Journal of Medical Sciences*, except that it extended some six or seven inches above the knee. As soon as this was applied, our patient, on the 26th of March, 1851 (about eighteen months after the accident), immediately, with a cane, walked across the floor with a pretty firm step. The mobility of the artificial limb at the knee and ankle had otherwise a twofold desirable purpose, as it permitted the exercise of the knee and ankle-joints, the latter having become considerably impaired in motion, from

an injury he had sustained about a year previously. In from four to six months the tibia became sufficiently strong to walk without the apparatus, and his ankle also improved. The fractured bone firmly united, and in six months after wearing it, he resumed his situation in the employ of the Baltimore and Ohio Railroad Company. I have not seen him for some time; but am credibly informed by his family, that he has had no occasion to wear the supporter for upwards of a year. Indeed, he might have dispensed with it earlier, but I advised him to wear it as a precautionary measure.

CASE 3.—Ununited Fracture of the Femur, of five months' duration, cured in seventeen weeks by the Artificial Limb, so that he could walk with only a cane.—Jno. K—, æt. 40, was admitted into St. Joseph's Hospital in the fall of 1852, under the care of the late Dr. Wm. E. Horner, laboring under a recent fracture of the lower third of the left femur. After being treated, by Dr. Horner, with Dessault's long splint slightly modified, the bone was discovered to be ununited, the amount of callus being very small and permitting free motion at the seat of fracture. Friction of the ends of the bone being freely practised, blisters were applied round the limb at the seat of fracture, and the patient took cod-liver oil freely, with full diet and porter; when, after a few days, the splints were again applied and the limb kept at rest for four weeks. A second examination yet showing no improvement, the limb was carefully bandaged from the toes to the groin, and splints of binders' board applied round the thigh, when he was placed on crutches and directed to walk about as much as possible. When I took charge of the wards, a short time after this, I found him unable to move the limb or bear his weight upon it, but continued the treatment of Dr. Horner for some time longer, whilst the artificial limb was being made. On the 17th of April, the dressing was removed and the motion at the fracture found to be free in nearly all directions, the limb being shortened nearly three inches, except when extension was practised. The new apparatus being applied, he was at once placed on his feet with crutches, and walked across the floor, putting his foot to the ground and bearing some weight upon it. The apparatus requiring alteration, he was kept in bed for five days, at the end of which time he again applied his artificial limb and walked about the grounds freely, spending much time in the open air as warm weather came on. When the apparatus was removed, after six weeks' trial, there was an evident firmness in the fracture, and on October 3, 1853, seventeen weeks after its second application, the bone was so firm that he was permitted to walk without the splint, and in a few days walked freely with only a cane, and left the hospital. In December, he left the artificial limb at my office, being well able to walk with a high-heeled shoe, the shortening measuring by accurate measurement two inches.

CASE 4.—Ununited Fracture of the Femur of six months' standing; suppuration; great exhaustion; hectic; cured in nine weeks by the use of the Artificial Limb.—The history of this case is given as furnished me in the following letter, dated May 22, 1854, from Dr. G. Dock, of Harrisburg, Pa:

"The patient is 28 years of age. It appears his thigh was fractured by the falling of a bank of earth on him, whilst excavating a cut on the railroad. The accident occurred last fall. He was placed under the charge of a physician of this place; but, after he had been under his treatment for *three months*, I was called in to attend him.

"I found him in the following condition; first, his general health much impaired; hectic fever; foul tongue and breath; pulse 115 to 120; irritable; slept but little; no appetite; and a torpid, depraved condition of the excretory system. The leg was in a long poplar box, in a state of extension; the bandaging from the foot up to the thigh very tight, and he suffering much pain. I next took a survey of the limb (thigh), and at once saw it was crooked and much too short. I then applied a tape, and measured the injured limb from the anterior superior spinous process of the ilium to the centre of the patella; then measuring the sound one, I found the fractured limb nearly three inches short. I then removed a mass of sheet-iron splints, about a peck of bandages, &c., &c., from the thigh, and found the bones, as I anticipated, the upper fragment drawn up by the muscles of the pelvis, the upper end of the lower fragment being drawn backwards by the strong flexor muscles of the thigh, thus causing it to pass up under the

upper fragment to the extent I have mentioned. I took everything off, placed a nice Scultet's bandage on a padded *double inclined plane*, and flexed the thigh and leg. I then coaptated the bones (which I found ununited), reducing the limb to its proper length very easily, as the muscles were so soft and debilitated as to offer but little resistance. I then adjusted the bandage and placed splints on each side, with an extending point and a buckskin perineal counter-extending band, all working pretty well for some days.

"As I then discovered a spot of *blood* oozing through the bandage, under the calf of the *leg*, I removed the bandage, and found a gangrenous ulcer about as large as a half dollar, and three or four lines deep at this point, the foot and leg being purple, and with a low degree of vitality, several spots existing on the top of the foot and ankle, and threatening to slough soon. I was therefore obliged to loosen everything about the thigh that could obstruct the free circulation, and favored the suppuration of the leg by the gentle dressings and warm fomentations.

"The next morning, the foot and leg were enormously swollen and *œdema-*tous, and sloughs were open on the upper and lower sides of the ankle and top of the foot. To these I applied warm poultices of flaxseed meal and yeast, gave him a grain of opium at night and wine-whey through the day, with an occasional dose of solution of quinine, and a little beef tea. But it is unnecessary to detail my treatment. I succeeded in saving his leg, and improving very much his general health, and as his thigh was a secondary matter then, and, of course, no deposit of plastic or osseous matter expected under the circumstances, I just retained the limb in as favorable a *position* as possible, and could apply no retentive means on account of the enfeebled condition of his system, his skin bearing scarcely the pressure of the weight of the limb itself, much less any firm splinting, &c. It is now about eight weeks since I first saw him."

The following history was furnished by Dr. Hoyt, the Resident Surgeon of St. Joseph's Hospital, after his admission:

"Michael Neelan, *æt.* 29, was admitted into the hospital on the 23d of May, with an ununited fracture of the femur. He was at the time in an exceedingly debilitated condition; indeed, was almost in the last stages of hectic. He had little appetite, was extremely emaciated, and had decided night-sweats. His pulse was feeble, and ranged considerably above 100. His tongue was clean, but pale.

"On examining his leg, I found a small ulcer on the under side of the knee, which discharged healthy pus. The leg and foot were enormously swollen; the ankle was nearly ankylosed, and the toes possessed little motion. The muscles of the thigh were excessively attenuated. The bone was fractured at about the junction of the upper with the middle third. The upper fragment overrode the lower, and at the same time the two fragments formed an angle outwards of about thirty degrees. The limb was shortened three inches. There was a complete false joint at the seat of fracture. Moving the limb in any direction gave little pain unless carried to a considerable extent. He was put on good diet, with the use of tonics. His leg was bandaged every day with a flannel bandage; at the same time the joints were freely moved.

"On the 28th of May, as the leg had been much reduced in size, the bandage was discontinued, and Dessault's apparatus for fracture of the femur was applied in order to maintain extension until the appropriate apparatus should be prepared. Dessault's apparatus was continued until the 13th of June, when it was removed, and the flannel bandage reapplied. The foot had become considerably swollen during its discontinuance.

"The suitable apparatus (artificial limb) having been prepared, was applied for the first time on the 19th of June. He was able to walk with a little assistance on the same day. Though still weak and emaciated, his health and appearance have much improved. From the time he commenced walking his improvement was rapid. He acquired new strength and vigor. A mass of callus was gradually formed, uniting the two fragments, until, on the 9th of August, it had acquired sufficient hardness to render it safe for him to walk, with the assistance of crutches, without his apparatus, which had been sent to undergo alterations. During the whole of this period he gradually improved in

the facility with which he walked. He at first required two crutches, and even then walked with difficulty; but as he grew stronger, a cane was substituted for one crutch, and then for another. The broken limb measured, on the 19th of August, two inches and a half less than the other. We may certainly hope that, should he continue to improve, he will eventually have a highly useful natural leg in the place of the artificial one, which I firmly believe he would have required but for this valuable apparatus."

This patient soon afterwards recovered the use of his limb to such an extent that I returned him to the charge of Dr. Dock, at Harrisburg.

CASE 5.—*False Joint in the Femur, of twenty weeks' standing, cured in six weeks by the use of the Artificial Limb.* (Report furnished by Dr. R. J. Lewis, of Philadelphia.) "The case in which I advantageously applied the apparatus, proposed by yourself, for the relief of pseudarthrosis, was that of an ununited fracture in the upper third of the thigh-bone, occurring in a heavy muscular man aged about fifty-five years, of general healthy appearance, but of rather irregular habits. The fracture had been treated with the long, straight splint; the apposition of the fragments seemed quite correct, and with no apparent shortening; but yet, at the end of about four months, there had evidently no bony union taken place, and there was an unimpeded mobility of the limb in all directions at the seat of fracture. No favorable change, for a month after, taking place in the condition of the parts, and the patient suffering much, and becoming intolerant of the confinement, it was deemed advisable to make use of mechanical support, and, if possible, to place him on his feet. This indication was answered admirably by the appliance constructed by Mr. Rohrer, similar to others which had been previously formed after your direction by him, and fitted to the limb. The patient was at once placed in a walking attitude, and continued for some time moving about with the assistance of a crutch or cane. At this time the fragments had taken a permanent position, overlapping each other, and projecting somewhat outwardly. The limb continued to acquire more firmness, until, after five or six weeks, he was able to dispense with the support of the apparatus entirely, and has now a somewhat deformed and slightly shortened, yet substantially useful limb."

† CASE 6.—*False Joint in the Humerus, of six months' standing, relieved, and permitting the use of the Arm in "type-setting."*—From Dr. George Dock, of Harrisburg, I have recently received the following notes of a case of false joint in the humerus:

"A man, about fifty years of age, has been recently presented to me for treatment for a false joint in the left humerus, just above the insertion of the pectoralis major. The history of the case showing that the dressing of the fracture had been very imperfect, I was not surprised at finding a false joint of its character, and doubt whether anything short of a seton or Dieffenbach's pegs will bring about union; but if you can devise an apparatus that will suit him, be kind enough to write to me." The cost of the limb, fifteen dollars, being beyond the patients' means, Dr. Dock writes as follows, October 24, 1854: "My man with ununited fracture of the humerus was unable to purchase an apparatus. I consequently made one for him myself, and he is now at his daily work (type-setting), and bids fair to recover with a united bone."

(F) CONCERNING DISEASES OF THE BONES AND JOINTS.

ART. 65.—*Some statistics connected with Orthopædic Surgery.* By Mr. LONSDALE, Surgeon to the Orthopædic Hospital.

(*Lancet*, Dec. 9, 1854.)

The following is an abstract of a paper recently read before the Royal Medical and Chirurgical Society, entitled "An analysis of 3000 cases of various kinds of deformities admitted at the Royal Orthopædic Hospital, Bloomsbury Square, with brief remarks on some of the more interesting points connected with their pathology and treatment."

This paper is arranged in six divisions :

I. Deformities of the bones and joints of the lower extremities, arising from weakness either in the bones themselves, in the ligaments, or in the muscles—1663 cases.

II. Club-feet—495 cases.

III. Deformities of the spine—465 cases.

IV. Affections of the joints from paralysis—288 cases.

V. Deformities from badly-united fracture—63 cases.

VI. Deformities from arrest of development—16 cases.

Simple bow-legs, or outward curvature of the tibia and fibula, is the most common, amounting to 533. Simple knock-knees occur the next in frequency, being 481. Knock-knees and bow-legs may co-exist as rickets, and produce a very great amount of deformity. Bow-legs, with outward curvature of the femur, number only 23; bow-legs of one side, and knock-knee of the other, may be remedied in early life, but not after the bones have become firm.

Club-feet are divided into—1. Talipes varus. 2. Talipes valgus. 3. Talipes equinus. 4. Talipes calcaneus. To one form of talipes equinus he gives the name of rheumatic, because that disease causes contraction of the muscles of the calf.

All cases of varus require the division of tendons—viz., the tibialis anticus and posticus, the tendo Achillis, and the plantar fascia. In talipes valgus, the extensor communis and the perones must be divided. In talipes equinus, the tendo Achillis offers the obstacle to replacement. In talipes calcaneus, the treatment is effectual only in those cases (congenital) where the deformity arises from spasm of the muscles in front of the leg. When paralysis of the muscles of the calf exists, the relief is partial.

Deformities of the spine are divided into—lateral curvature, 173; posterior curvature, 70; latero-posterior, 29. Abscesses form when carious disease attacks the lumbar vertebræ, but not in the higher regions of the spine. Lateral curvature may depend upon disease of the thoracic viscera. Joints may be permanently contracted by the action of surrounding muscles; the hip is most frequently affected. Wry-neck often causes alterations in the expression of the features. Deformities may arise from fractures badly united; the number amounted to 31. The author had seen some cases of spina bifida in the hospital; also some of curvature of the legs, from excessive development of the adipose tissue in young children.

ART. 66.—*On subcutaneous Osteotomy.* By Dr. P. FRANK.

(*Medical Times and Gazette*, Dec. 16 and 23, 1854.)

In these papers, Dr. Frank chiefly occupies himself in explaining the process of subcutaneous osteotomy, which has recently been introduced by Professor Langenbeck, of Berlin, for the cure of various osseous deformities of the extremities; and this he does by translating a paper published by Professor Langenbeck, a few months ago. It is, therefore, Langenbeck who speaks to us in the first person, not Dr. Frank.

"During the summer term of the present year, I have already performed subcutaneous osteotomy in three cases, and that with results so brilliant and encouraging that I believe myself justified in entertaining hopes that this new operation will supply a desideratum till now often experienced.

"The instrumental apparatus I made use of consists in—

"1. A fluted chisel-drill, two lines in breadth, attached to a centre-bit.

"2. A straight saw, $1\frac{1}{2}$ in. in breadth.

"3. A common strong scalpel.

"The operation having till now only been performed on the tibia, the execution was in all cases much the same.

"An incision, rectangular with the longitudinal axis of the bone, was made on the internal surface of the tibia, dividing the integument and periosteum at once.

"I then applied the drill in the centre of this incision, and perforated the bone transversely from within outwards. The cessation of resistance safely denotes

the final accomplishment of the perforation, so that no danger of injuring the anterior tibial nerve and artery need be apprehended.

"The narrow saw is now introduced into the aperture drilled through the bone, and the greater part of the latter divided, by sawing, both in the direction of the crista or towards the posterior surface of tibia, without any further enlargement of the wound in the soft parts.

"The bone is directly straightened by fracture of the remaining osseous bridges, or this proceeding can be deferred till the consecutive inflammation and suppuration have subsided. In the first two cases, I followed the first plan, indulging the hope that the wound of the integuments would heal without suppuration; but, after having experienced that this could not be expected, I performed instantaneous fracture in the third case.

"Further observation will have to decide on the comparative merits of these proceedings; at present I am inclined to far prefer the latter.

"Two reasons have induced me to divide only a part of the bone by the saw; the first is the great difficulty which the small wound of the integuments would oppose to perfect division; the second and more important one is, that the great mobility of the fragments necessarily resulting after perfect division by the saw, is avoided by consecutive gradual fracture, which will always allow small osseous bridges to remain intact, rendering the fracture imperfect.

"Experiments and future experience will yet have to show the extent of the subcutaneous division of the bone necessary to permit of easy fracture of the remaining parts.

"In the third case which I operated upon, this act was attended with great difficulty, a powerful effort being required to fracture the hard and voluminous callus.

"This procedure will no doubt be rendered easier of execution, if the bone is perfectly divided from the centre towards the concavity of the curve, instead of allowing bridges to remain on both sides, as I have done till now.

"As to the local and constitutional effects of the operation, they are so insignificant, that subcutaneous osteotomy cannot be compared with a resection of bone, exposed by a large external wound. The pain experienced directly after the operation, and the febrile reaction, are scarcely more considerable than after simple fracture.

"Three or four days after the operation the soft parts around the wound are slightly inflamed and painful on pressure.

"Closure of the wound by first intention happened in none of the cases operated upon, suppuration supervening from the sawn surfaces of the bone.

"In the second case the discharge was not inconsiderable, and a fortnight elapsed before it subsided.

"Suppuration ceases as soon as the drilled canal and the saw-wound are filled with granulations; the external wound is then rapidly closed, and the bone is in the same condition as in consolidatory simple fracture.

"I regard it as no inconsiderable advantage connected with this operation, that, whether it be performed to straighten a bone after falsely united fracture, or a curvature of the bone after disease, or an osseous ankylosis, the normal position need not be perfectly restored at once, but can be gradually effected during the consolidation of the bone; thus rendering it possible to avoid any undue contusion and laceration of the soft parts.

"From the experience till now collected on the operation, I think myself justified in drawing the following inferences:

"1. Bone can be subcutaneously divided, like tendons and muscles, and subcutaneous osteotomy bears well-nigh the same relation to resection with extensive division of the soft parts, as subcutaneous tenotomy to division of the tendons after dividing the integuments.

"2. Partial subcutaneous division of the bone by the saw is preferable, because perfect mobility of the fragments is thereby avoided.

"Union, by immediate formation of callus, as in simple fracture, cannot be expected after subcutaneous osteotomy, because the small particles of bone detached by drill and saw act as foreign bodies, which must be eliminated by suppuration. I will conclude with a short description of the cases in which I

have performed the operation, deferring more accurate statements, accompanied with representations of the deformed limbs, to a future period."

CASE 1.—Ann Bolle, æt. 9, of strong, healthy constitution; intellectual faculties but poorly developed. No accurate details can be procured about the development of curvature of right tibia, which took place in early childhood.

Right tibia is curved strongly outwards, so that the foot, following the curve, is directed inwards and upwards, similar to the position in varus. The child supports its weight on the external malleolus, the sole of the foot not being able to touch the ground. At the same time, the bones of the leg are rotated outwards, so that the internal malleolus is directed forwards, and the point of the foot everted. The leg is shortened one inch by the curvature.

An attempt at forced fracture, on February 2, proving unsuccessful, subcutaneous osteotomy of tibia was performed on June 7, in the manner above described.

The wound in the integuments, half an inch in length, was closed by two sutures. A considerable arterial hemorrhage, which took place as the bone was sawn, subsided after the cold-water dressing had been applied.

Intense pain in the wound; sleep was procured by an opiate. The next evening, fever, with moderate swelling of the soft parts around the wound, out of which a bloody serum exudes on pressure. The sutures were therefore removed.

On the third day increased swelling and tenderness of the parts, with discharge of thin pus mixed with particles of bone.

On the fifth day a small abscess was formed on the external aspect of tibia, corresponding to the external end of the canal in the bone. The fever now rapidly subsided, a good suppuration is established, and healthy granulations are thrown out.

On the 28th of June the patient incautiously left her bed, and resting the weight of the body on the limb produced a perfect fracture of the osseous bridges which still remained. A slight hemorrhage supervened, and, on the following day, I performed fracture of the tibia. The leg was now perfectly straightened, and the normal position maintained by splints.

A slight febrile reaction supervened after the operation, but no fresh suppuration took place out of the wound, which was now perfectly filled with granulations. The fragments were, therefore, now rendered perfectly immovable by a starched bandage, which was fenestrated to permit observation of the granulating wound.

A slight suppuration commenced again on the 3d; on the 27th, the wound was perfectly closed; the fragments are united by a soft callus; foot and leg have a perfectly normal position.

"I had an opportunity of examining this case at the end of October last. The leg is perfectly straight; the position of the foot normal; the fragments are firmly united by callus."

CASE 2.—Johanna Gunther, æt. 5, of strong and healthy appearance, is affected with rachitic deformity of the lower extremities. Both femoral bones and left tibia are slightly curved outward; but the right tibia presents a considerable curvature forwards and outwards; and the foot is turned inwards and upwards in such a high degree that the child treads, in walking, on the external malleolus.

On the 15th of June, I first attempted to straighten the bone by forced fracture; but, this proving ineffectual on account of the hard state of the bone, I directly proceeded to perform subcutaneous osteotomy.

A transverse incision, half an inch in length, was made down to the bone, on the internal aspect of the tibia, opposite the point of greatest curvature. I then applied the drill at the superior angle of this incision, which was situated two lines below the crest of the tibia, and perforated the bone from inwards outwards. A second perforation was performed in the same direction, half an inch below the first, the drill being applied to the bone at the inferior angle of the incision.

The saw was now introduced into the first canal, and the bone divided down to the second perforation, so that merely two thin layers of bone at the crista and posterior surface of tibia remained undivided.

The hemorrhage was considerable; the wound was closed by sutures, and the cold-water dressing applied.

The patient was feverish on the following day; and the cold applications were continued on account of pain in the wound.

The fever had abated the next day, but the borders of the wound were red and swollen, and bloody serum exuded on pressure.

The wound was dressed with oiled lint, and cataplasms were applied.

Moderate suppuration supervened on the fourth day, and subsequently increased, accompanied with œdematous swelling of the leg.

On the 3d of July, the discharge had perfectly subsided, and the wound threw out healthy granulations.

I therefore proceeded to perform fracture of the remaining osseous bridges, for which a moderate amount of manual force sufficed, two distinct cracks announcing the successive fracture of tibia and fibula.

The limb was now perfectly straightened, and splints were applied. A slight degree of pain, experienced after the operation, soon subsided.

No fresh suppuration supervened, but the granulations became luxuriant, and necessitated the repeated application of the lunar caustic.

On the 17th of July, the wound being nearly perfectly closed, and the bones united by a callus of cartilaginous consistency, a plaster-of-Paris bandage was resorted to, to insure perfect immobility of the limb.

"In the latter part of October, I had frequent opportunities of examining this case. The external wound was perfectly healed. The bones of the leg were straight; the callus perfectly consolidated; so that the most scrupulous examination could detect no abnormal mobility. The child was allowed to rise, and could walk without pain, the position of the foot being perfectly normal."

CASE 3.—A. Z., æt. 35, fractured his left leg in early childhood, very likely in his fifth year. The seat of the fracture was the lower third of the tibia; the fibula was fractured lower down, but both bones were united by a very thick, firm callus. The fragments form a sharp, angular protuberance in the course of the crest of the tibia. The foot is turned backward and inward, with the inferior fragment of the tibia; the angle formed by the fragments of the tibia amounting to 105 degrees. The inferior fragment of the tibia is, at the same time, dislocated *ad longitudinem*, riding on the external aspect of the upper fragment. By this dislocation the limb is shortened two inches; and, although the patient wears a high heel, walking is very difficult and imperfect, particularly on account of the dislocation of the foot backwards.

Of late the leg became so painful and sensitive, even after slight active exercise, that the patient has been obliged to desist from walking, and make use of a chair-carriage.

The patient is of short and slight build, of pale complexion, and shows marks of previous scrofulous affections.

For the last fourteen or fifteen years he has labored under no serious disease.

On the 4th of July, I performed subcutaneous osteotomy in the Clinic. A transverse incision, half an inch in length, was made on the internal aspect of the tibia; the drill applied in the middle of the wound, and the callus perforated, from inwards, outwards. I then introduced the saw, and divided the bone subcutaneously, allowing an anterior and posterior bridge to remain. This part of the operation was long and difficult, on account of the great thickness and density of the callus. I then proceeded directly to perform fracture of the undivided bridge, which succeeded without trouble. A distinct crepitus was heard, and the bone considerably straightened. I was deterred from strengthening the bone perfectly, by the apprehension that the integument on the internal side of the tibia, being already tensely bulged out by the callus, might be lacerated.

The extremity was now enveloped in cotton-wadding, surrounded by a flannel roller, and a splint of gutta-percha applied, so that the wound remained accessible. The patient was then transported in a carriage to his residence.

He complained of pain in the wound. This had abated on the following day; but the frequency of his pulse was slightly augmented, and the parts around the wound were red and swollen. A small abscess was formed on the fifth day, opposite the external end of the canal, drilled through the bone, out of which healthy pus was discharged by an incision.

The symptoms of a general and local reaction, were far milder in this case than in the two former ones,—a circumstance which can most likely be ascribed to the slight fact, that dense callus is not endowed with the same degree of vulnerability as the medullary cavity even of hardened bone.

Suppuration had perfectly subsided on the 18th of July; so that a further attempt to straighten the limb could be made. By this, the lateral curvature of the tibia was perfectly rectified, and the dislocation forwards so diminished, that the fragments formed an angle of 130° .

No renewed suppuration taking place after this operation, it was repeated on the 29th, and the leg rendered perfectly straight.

"On the 2d of November," adds Dr. Frank, "I had an opportunity of examining this case in the clinic of Professor Langenbeck.

"The left leg is a little longer than the right; it is perfectly straight and the position of the foot normal in every respect. A most careful examination failed to detect the slightest abnormal mobility, and the patient was able to walk with ease.

"A slight angular projection of bone at the commencement of the lower third of the crest of the tibia constituted the only remaining deformity."

(G) CONCERNING ANÆSTHETICS.

ART. 57.—*Note on the induction of Sleep and Anæsthesia by compression of the Carotids.* By Dr. FLEMING, Professor of Materia Medica in Queen's College, Cork.

(*Medico-Chir. Rev.* April, 1855.)

While preparing a lecture on the mode of operation of narcotic medicines, I thought of trying the effect of compressing the carotid arteries on the functions of the brain. I requested a friend to make the first experiment on my own person. He compressed the vessels at the upper part of the neck, with the effect of causing immediately deep sleep. This experiment has been frequently repeated on myself with success, and I have made several cautious but successful trials on others. It is sometimes difficult to catch the vessels accurately, but once fairly under the finger, the effect is immediate and decided.

There is felt a soft humming in the ears, a sense of tingling steals over the body, and, in a few seconds, complete unconsciousness and insensibility supervene, and continue so long as the pressure is maintained. On its removal, there is confusion of thought, with return of the tingling sensation, and in a few seconds consciousness is restored. The operation pales the face slightly, but the pulse is little, if at all, affected. In profound sleep, the breathing is stertorous, but otherwise free. The inspirations are deeper. The mind dreams with much activity, and a few seconds appear as hours, from the number and rapid succession of thoughts passing through the brain. The experiments have never caused nausea, sickness, or other unpleasant symptom, except, in two or three instances, languor. The period of profound sleep, in my experiments, has seldom exceeded fifteen seconds, and never half a minute.

The best mode of operating is to place the thumb of each hand under the angle of the lower jaw, and, feeling the artery, to press backwards, and obstruct the circulation through it. The recumbent position is best, and the head of the patient should lie a little forwards, to relax the skin. There should be no pressure on the windpipe.

The internal jugular vein must be more or less compressed at the same time with the carotid artery; and it may be thought that the phenomenon is due, wholly or in part, to the obstructed return of blood from the head. I am satisfied that the compression of the artery, and not of the vein, is the cause. The

effect is most decided and rapid when the arterial pulsation is distinctly controlled by the finger, and the face loses somewhat of its color; and, on the other hand, is manifestly postponed and rendered imperfect when the compression causes congestion of the countenance.

This mode of inducing anæsthesia is quick and certain. The effects diminish immediately when the arteries are relieved from pressure, and are not liable to increase, as happens sometimes with chloroform and ether, after the patient has ceased to respire their vapors. So far as my experience goes, it has shown no tendency to cause faintness; and usually, after its employment, no unpleasant feeling whatever remains.

I think it may be found useful as a remedial agent in certain headaches, tetanus, asthma, and other spasmodic diseases, and to prevent pain in such small operations as the extraction of a tooth or the opening of an abscess. Whether the compression can be continued *with safety* sufficiently long to make it available in larger operations, has to be ascertained. But, whatever be the practical value of this observation, it is at least interesting as a physiological fact, and may be the means of throwing light on the causes of ordinary, medicinal, and hypnotic sleep, and of coma. Some facts encourage the supposition that the circulation of the brain is languid in ordinary slumber, and the etymology of the word carotid shows the ancient belief in the dependence of deep sleep on some interference with the passage of the blood through these vessels; and it is not an unreasonable conjecture, that hypnotic sleep may be sometimes caused or promoted by the contracted muscles and constrained position of the neck compressing the carotid arteries, and diminishing the supply of blood to, and pressure on, the brain.

ART. 68.—*On the administration of Chloroform.* By (1) Mr. SYME, and (2) Dr. SNOW.

1. (*Lancet*, Jan. 20, 1855.)

2. (*Association Medical Journal*, April 6, 1855.)

1. In the following remarks (which form part of a clinical lecture), Mr. Syme insists very particularly upon the importance of watching the respiration, and not the pulse, in estimating the effects of chloroform upon the system; and, in this point, his opinion coincides with that of Mr. Clendon, Surgeon-Dentist to the Westminster Hospital, whose paper on the subject will be found in a former volume (vol. XVI, p. 160).

Mr. Syme speaks as follows:

So far as I can ascertain, from what I have heard and read upon the subject, there are important differences between the mode of administration of chloroform here and in London. It appears that here it is given according to principle, there according to rule. There great attention is paid to the number of drachms or minims employed; here we are entirely regardless of the amount used, and are guided only by the symptoms of the patient. The points that we consider of the greatest importance in the administration of chloroform are—first, a free admixture of air with the vapor of the chloroform, to ensure which, a soft porous material, such as a folded towel or handkerchief, is employed, presenting a pretty large surface, instead of a small piece of lint, or any other apparatus held to the nose. Secondly, if this is attended to, the more rapidly the chloroform is given the better, till the effect is produced; and hence we do not stint the quantity of chloroform. Then—and this is a most important point—we are guided as to the effect, not by the circulation, but entirely by the respiration; you never see anybody here with his finger on the pulse while chloroform is given. So soon as the breathing becomes stertorous we cease the administration; from what I have learned, it is sometimes pushed further elsewhere, but this we consider in the highest degree dangerous. Attention to the tongue is another point which we find of great consequence. When respiration becomes difficult, or ceases, we open the mouth, seize the tip of the tongue with artery-forceps, and pull it well forward; and there can be little doubt that death would have occurred in some cases if it had not been for the use of this expedient. We also always

give the chloroform in the horizontal position, and take care that there is no article of clothing constricting the neck. There are thus considerable differences between our practice and that which prevails more or less elsewhere. We use no apparatus whatever, take the respiration for our guide, attend to the condition of the tongue, and never continue beyond the point when the patient is fully under the influence of the anæsthetic.

2. Dr. Snow's paper is called forth by these remarks of Mr. Syme. "It seems physically impossible," he says, "that the breathing should not be noticed during the administration of narcotic vapors, for it is by the breath that they are exhibited; and it is extremely improbable that the state of the respiration has ever been disregarded. Even a stranger to medicine could hardly go on giving chloroform after the breathing of the patient became stertorous and labored, especially as a state of complete insensibility always accompanies this kind of breathing. In treating of sulphuric ether in 1847, I made the remark that, 'if there is the least snoring, I always leave off the vapor entirely;*' and, in treating of chloroform, I have always stated that the inhalation should be suspended whenever the breathing becomes stertorous. In doing so, however, I never supposed that I was propounding anything new; I looked on the matter as one of those truisms that every one would at once assent to, but which could not with propriety be omitted in treating systematically of the subject.

"I have always considered the pulse amongst the secondary symptoms in administering chloroform, not because any serious affection of the pulse would be a trifling matter, but because the vapor should be so given that it would be impossible for it to exert any serious effect on the pulse. After stating, in a paper written four or five years ago, that the most important point in giving chloroform is to take care that its vapor is systematically diluted with a sufficient quantity of air, I said that, the above precaution having been taken, 'it is chiefly by attention to the respiration and the eye that danger is to be avoided;*' and I added, 'The pulse may be felt as a physiological inquiry, or with reference to the operation, but gives no guiding information concerning the chloroform, for the following reasons: when the vapor is diluted to a safe extent, it might be continued till death, as I have ascertained in animals, and the pulse would still beat distinctly for many seconds after the respiration had ceased; and if, on the other hand, the vapor be of dangerous strength, the heart might suddenly cease to beat, and the first intimation of danger from the pulse would come only too late.' In several of the deaths from chloroform which have since occurred, the pulse, which was carefully noted, ceased suddenly, without giving previous warning of danger.

"When the vapor of chloroform is so diluted that it does not constitute more than four or five per cent. of the air that is breathed, its effects are produced very gradually: and I have ascertained, by very numerous experiments on animals, that when the vapor is continued of this strength till they are killed, the breathing ceases gradually, being first embarrassed and feeble; and in all cases the pulsations of the heart continue freely for one or two minutes, or even longer, after the breathing has ceased; the circulation being ultimately arrested in consequence of the absence of the respiration, as in asphyxia. I have satisfied myself of this by keeping the stethoscope carefully applied to the chest of the animals whilst they were dying. During the interval that the heart is still beating after the respiration has ceased, the animal can easily be restored by artificial respiration. It moreover often happens that the animal takes one or two deep gasps just at the moment when the heart is ceasing to beat; and if the chloroform have been removed, so that fresh air is allowed to enter by these gasps, they usually have the effect of re-establishing the action of the heart, and recovery takes place."

Again:—

"From the above facts and considerations, it must be very clear that the most important rule in giving chloroform is to take care that the vapor is diluted to a sufficient extent with air. In administering sulphuric ether, it was sufficient to watch the symptoms in order to prevent danger, although even then a know-

* "The Inhalation of Ether in Surgical Operations," p. 38.

ledge of the strength of the vapor was a useful guide; but, with chloroform, the proper dilution of the vapor becomes more important even than the symptoms. However, when the quantity of chloroform that is required to make a patient insensible, is diffused through as much air as was occupied by the dose of ether vapor, the one anæsthetic is as safe as the other. The most perfect way of diluting chloroform vapor, is to mix it with air in a very large hydrogen balloon. I gave it in this way in several cases of tooth-drawing, in St. George's Hospital, in 1848, the proportions being four per cent. of vapor, and ninety-six per cent. of air; and the results were very uniform and satisfactory. In practice, however, it is often necessary to sacrifice perfection more or less to convenience. I have, since the latter part of 1847, used an apparatus for the administration of chloroform, which allows me to regulate the proportion of vapor in the air with sufficient accuracy for practical purposes.

"The best criterion that an operation may begin, is the suspension of the sensibility of the conjunctiva. When the free edge of the eyelids can be touched without causing decided winking, the patient will hardly ever show signs of pain from the surgeon's knife. The chloroform, as I said before, must always be suspended if the breathing becomes stertorous; but it is seldom necessary to wait for this symptom.

"During the removal of tumors of the jaw, and in other operations on the face, in which the inhaler cannot be applied after the surgeon begins, I apply chloroform on a hollow sponge, first diluting it with an equal quantity of rectified spirit, to limit the amount of vapor given off. Dr. Warren, of Boston, in America, long ago recommended what he called strong chloric ether, which consisted of one part of chloroform and two of spirit by measure. The patient inhales hardly any of the spirit, as the chloroform evaporates first, leaving nearly all the spirit behind. The process of inhalation is not uniform, owing to the varying strength of the solution as the chloroform evaporates; but this plan is well worthy the attention of those who wish to give this agent with no other appliance than a handkerchief or sponge. Either one or two parts of spirit have the effect of so limiting the quantity of vapor taken up by the air, that no sudden accident could happen.

"The following circumstances show very clearly the influence of diluting chloroform with spirit. The so-called strong chloric ether of Dr. Warren had been employed on a sponge in the Massachusetts General Hospital for three or four years without accident; when one day, a new dispenser handed pure chloroform in mistake for that solution, and two accidents happened in two consecutive operations: one was fatal, but in the other case the patient was resuscitated from a state of suspended animation. The accidents were, no doubt chiefly due to the circumstance, that it had been the custom to use the diluted preparation more freely than pure chloroform would have been used; still they illustrate equally well the comparative safety of diluted and undiluted chloroform when used on a sponge or handkerchief.

"Dr. J. Mason Warren has informed me that, since these accidents, the governors of the hospital have prohibited the inhalation of any other agent than sulphuric ether, for preventing pain in surgical operations."

ART. 69.—*The advantages resulting from the local application of Chloroform Vapor.*

By Dr. HARDY.

(*Dublin Medical Press*, Nov. 15, 1854, and Feb. 21, 1855.)

In these papers, Dr. Hardy collects together many cases in illustration of the advantages of this practice. These cases he divides into four heads:—

1. Cases in which the vapor is applied to the unbroken skin.
2. Cases in which the cuticle is removed.
3. Cases in which the vapor is applied to unbroken mucous membrane.
4. Cases in which it is applied to abraded mucous membrane.

Under each head are many illustrations, of which we will select the following.

(1.) *Cases in which the vapor is applied to the unbroken skin.*

Under this head we have one case of femoral hernia, two cases of tetanus,

one of phthisis, one of neuralgia, one of dysmenorrhœa, several of cholera, two or three of scalp-tumors, one of gout, one of rheumatic gout. In some of these, and particularly in the first two, there can be little doubt that the benefits arising from the chloroform were partly if not mainly due to the inhalation of the vapor, much of it escaping into the atmosphere of necessity. But this does not apply to all cases. Thus:

Cholera.—During the last few months, instances of diarrhœa have been very prevalent in Dublin. The administration of chloroform, in frequently repeated doses of from fifteen to twenty-five drops in a little cold water, has a most excellent effect in relieving nausea in those cases, and of imparting a sensation of general warmth; but as the influence exerted by this method of exhibiting it was of short duration, a much more decided and permanent benefit was obtained by applying the vapor by means of a sponge, moistened with chloroform, and placed in a tumbler. This applied over the epigastrium never failed in giving relief, and could be kept on constantly without the least inconvenience to the patients, who very soon became so convinced of its efficacy, that they anxiously wished for its continuance. (Care was necessary not to allow the fluid chloroform to touch the skin, as it felt so very hot; this, however, was easily accomplished by using a sponge sufficiently large to fill the end of the glass.)

Gout.—This case is related in the "*Gazette des Hôpitaux*," 23d September, 1854, by Dr. Renouard: "On the morning of the 25th, the pain was most intense. It increased during the day, and in the evening wrung cries from the patient, who writhed upon his bed, biting and tearing the sheets. The night passed without the least relief, notwithstanding the internal and external use of narcotics. The foot was œdematous; the skin was tense, and of a shining rose-color. On the morning of the 26th, having exhausted my resources, and being unable to remain an inactive spectator of such acute sufferings, I proposed the local application of chloroform, which was at once agreed to. Having procured Dr. Hardy's instrument, I commenced at noon the insufflation of the anæsthetic vapors, directing them chiefly to the most painful part. After twenty minutes' application, which was twice or thrice interrupted, reducing the real duration to sixteen or seventeen minutes, the patient felt well enough to request its suspension. He did not say that he was free from all suffering, but that he was considerably relieved. The part subjected to the vapor of chloroform had become pale and cold, instead of red and burning, as it had been before. Moderate pressure could now be made without exciting the sensibility of the patient, who, so short a time before, could not endure the slightest touch. The calm lasted an hour and a half or two hours; the pain subsequently appeared to return, and continued increasing until evening. When I saw the patient again, between eight and nine o'clock, he was suffering much, although less than on the preceding evening; he was particularly apprehensive about the night. At the same time, the central point of the pain had changed its place a little; it was nearer the internal ankle. The anæsthetic vapors were again applied uninterruptedly for fifteen minutes. All suffering ceased; what had been the principal seat of the pain could now be tolerably strongly leant on without the patient feeling it. After a few minutes he fell into a deep sleep, which lasted two hours. On awaking, he experienced merely a feeble sensation of pain, some transitory twitches returning at shorter or longer intervals, which did not prevent him from taking several other naps in the course of the night. From this day he quickly recovered. The attack was shorter than those of the preceding two years. The resolution of the congestion appeared to be more rapid than usual."

On the foregoing case, the editor of the *Revue Médicale* observes—"We cannot, in this case, fail to recognize the beneficial effects of the vapor of chloroform on the intolerable pain of gout; but its influence on the resolution of the œdema, although probable, does not appear to me to be sufficiently proved."

Rheumatic Gout.—On the 26th of October, a gentleman, who had suffered severely from frequent attacks of rheumatic gout, was directed by his medical attendant to have the vapor of chloroform applied to his foot, which was exceedingly painful. Mr. Robertson (the maker of the instrument), by means of the vapor douche, gave a bath of chloroform and warm water vapors combined. In a quarter of an hour he felt perfectly easy. Having dined with a friend, and

partaken of champagne, his distress returned; and on the 28th of October the bath was repeated. In three minutes all suffering was removed; and after its use for a quarter of an hour, he said he never was more free from pain in his life. On the 30th, he had another bath for a mitigated return of the pain, and with equally favorable results.

(2.) *Cases in which the vapor is applied to the abraded skin.*

Under this head we have cases of anthrax, painful ulcers, painful stump, cancer of the mamma, and elsewhere. When the cuticle is removed, either by abrasion, vesication, ulceration, or incision, the vapor of chloroform is enabled to act with much greater intensity than when the skin is unbroken. Whenever it is first brought in contact with parts in this condition, some patients complain of heat, others say it feels cool; in a few minutes a sensation is imparted of ease and freedom from pain, which in some instances is of very considerable duration. The following cases among others are given in illustration:

Case of Anthrax (from Dr. Benson, President of the Royal College of Surgeons of Ireland).—An unmarried lady, æt. about 36, highly nervous, and very impatient of pain, lately consulted me for anthrax, situated on the back of the neck, which was a little ulcerated and most painful. I proposed the inhalation of chloroform, to which she strongly objected, but consented gladly to its local application. The vapor was closely confined to the sore, and first produced a sensation of extreme heat, which was soon succeeded by perfect relief from suffering. A free crucial incision was then made, which did not give her the slightest uneasiness. She said the operation had not hurt her in the least; everything afterwards went on favorably.

Case of painful Stump (under the care of M. Larrey).—After an amputation at Val-de-Grace, the stump having become excessively painful, M. Larrey made use of Dr. Hardy's apparatus, the result being, that the pains were soothed as soon as the vapor came into contact with the wound ("Journal de Méd. et de Chirurgie Pratique," March, 1854.) This case, Dr. Hardy says, serves to show of what great advantage this practice may be in gunshot wounds, where extraction of the ball is necessary. A stream of chloroform passed into the wound might enable the sufferer to undergo the operation without any pain.

Several cases of open cancer are related, in which the relief to the pain was very marked.

(3.) *Cases in which the vapor was applied to unbroken mucous membrane.*

"Mucous surfaces seem to be particularly eligible for receiving the influence of chloroform vapor. When its local application was first brought before the notice of the profession, I alluded to the sensation of heat which was experienced when those tissues were subjected to its action. In some instances this is so great that it is complained of a good deal, but I have never met with any case in which it was necessary to relinquish its use on that account. Ceasing to propel the vapor for a few seconds was quite sufficient to enable the patient to bear it. The relief afforded is in general so agreeable that many would willingly endure a greater feeling of discomfort rather than be deprived of its efficacy."

Case of Painful Hemorrhoids.—At a meeting of the Surgical Society already alluded to, Dr. Forrest detailed the following case:

"A gentleman, æt. about 36, who had suffered from piles on several occasions, sent for me, owing to an attack of his old complaint. I found the mucous membrane of the anus everted, with several hemorrhoids attached to it. The pain was so severe, notwithstanding the use of fomentations, which had formerly relieved him, that no pressure could be borne, nor any attempt be made to return them. The vapor of chloroform was then applied by the douche for several minutes, which produced so soothing an effect that I was able to press them within the sphincter without causing him any uneasiness."

Case of Irritable Bladder.—A female patient, æt. 37, the mother of one child, had suffered so much from irritation of the bladder for two years, but particularly during the month of July last, that her state was most distressing. The calls to micturate were incessant, and always attended with very severe pain. By means of a catheter attached to the douche, I threw the vapor of chloroform into the bladder, occasionally removing the nozzle of the douche from the end

of the catheter, to allow the vapor to return. Great heat was at first complained of, but (by ceasing at intervals) the operation was continued for about five minutes. Next day the woman informed me that after the application of the chloroform, she was able to walk a distance of about two miles without being under the necessity of relieving the bladder. When she did pass water, it was in much greater quantity than it had been for a long time, and attended with less pain. The vapor was used on the second day with like beneficial results. Afterwards hip-baths and diluents completed the cure.

Case in which Menstruation was scanty and painful, and finally ceased.— —, æt. 35, enjoyed excellent health; menstruated regularly for three days, and free from any discomfort until her marriage, which took place nine years ago. After this event, she gave birth to a male child, which lived for six months. During lactation, the catamenia appeared each month as formerly. From this time her health gradually declined, and in the course of a year, notwithstanding medical treatment, she was in a very debilitated state. I first saw her four years after her confinement. Pregnancy had not taken place; her menstrual periods, in their approach, and while present, were accompanied with severe pains occurring at intervals, and the flow continued for scarcely one day. Ulceration of the os uteri, which I treated her for, soon got well, her health was restored, and she again conceived, but owing to an accident aborted at the third month. Although by the miscarriage her general health suffered little, yet from this date menstruation steadily lessened in quantity, but was not attended with pain, until at length it entirely ceased, without there being any reason to attribute this circumstance to the existence of pregnancy. As the secretion diminished, her head and chest became very much affected with what she described as a "bursting sensation," which was particularly distressing at the time of each expected return of the catamenia. She was becoming very fat, and had a feeling of general discomfort. Various remedies had been tried in order to restore the uterine secretion and to relieve those uncomfortable sensations, but to no purpose. I now directed the vapor of chloroform to be thrown into the vagina when the next period was known to be approaching. On the first occasion menstruation was established and continued for two days: on the three following, the same means being resorted to, it flowed for three days in proper quantity, and with the absence of all the uneasy feelings above described. It now comes naturally and without the use of chloroform, and in every respect her health is perfect.

Case of severe Uterine Pain, with suppression of Menstruation.—A lady of strong and healthy appearance, residing in the country, consulted me in September, 1852. She had given birth to two children, and had aborted several times. Since her last miscarriage, which was caused by jumping from a height, she felt a disagreeable sensation, of a painful nature, in the uterine region, and menstruation becoming more and more scanty and irregular, had entirely ceased. She was very languid and incapable of much exertion. On examination, the os uteri was found extensively ulcerated and the cervix enlarged. Her health having improved, and the uterus being healed, she returned to the country, where she made use of shower and hip-baths, and took gentle exercise on horseback, which served her greatly. Again her health declined, and she consulted a neighboring practitioner, under whose treatment she continued for a considerable time. Afterwards she came to town, and informed me that owing to severe pain in her back and uterus, she was unable to sit for any length of time in the erect position, particularly in the evenings. All those symptoms were greatly aggravated periodically, when menstruation should be present. The uterus was rather larger than natural, but had no abrasion, and the cervical canal was pervious. I commenced the local application of chloroform vapor at the expected catamenial period. The following is the report given in a letter by the patient herself:—It is with much pleasure I tell you the result of the chloroform ordered by you. While in town it enabled me to walk without pain in my back, or the very disagreeable internal pain, or gnawing feel, which I had for some time—I may say for years. I had not a change for the last twenty months; but having used the chloroform for ten days, it came on, which though scanty, I feel is all right. There was no pain whatever, as (when I

began to feel uneasy) I used the chloroform. It has done wonders for me already."

I lately received the following letter from this lady:

"I am able to take a great deal of exercise without fatigue, and when I have pain I use the chloroform, which has not in the least lost its effect, but soothes me at once." It is now five months since its application was commenced.

4. *Cases in which the vapor is applied to abraded mucous surfaces.*—The vapor of chloroform when applied to mucous surfaces abraded or ulcerated, generally causes a good deal of the sensation of heat; but although this feeling is more frequent and of longer duration than where the surface is unbroken, it is not so extreme as to prevent patients from easily bearing it. The following cases will serve to illustrate its influence when applied under these circumstances.

Case of Ulceration of the Os Uteri.—A patient, the subject of very extensive ulceration of the os uteri, suffered so much from lumbar pain and general distress in the uterine region, that the vapor of chloroform was applied in the usual manner, by means of the douche. The heat and scalding sensation was so great that until after the lapse of half an hour from its application, no beneficial effect could be perceived. No sooner had the uneasiness caused by the chloroform subsided, than the relief was complete, and of very considerable duration.

Elongation of the Cervix Uteri.—On the 20th of October last, late in the evening, I was called to a patient who was suffering from violent expulsive pains, which I found on examination to depend on an elongated growth from the uterine cervix, so long that it protruded through the os externum. The mucous membrane of the uterus was abraded, and the vaginal canal felt extremely painful to the touch. By an opiate suppository and draught, the pains were quieted, and the woman had a good night's rest. On the next day I placed a ligature on the tumor, and until the third day (when I removed it below the ligature by a curved scissors) the pains were on each return perfectly removed by the vapor of chloroform thrown into the vagina by the douche. No complaint whatever was made during its application to the abraded mucous membrane.

Cancerous Ulceration of the Rectum.—The "Medical Times and Gazette" for August 19th, p. 195, contains the results obtained by M. Gouzales Conde. It says: "The Spanish professor has, after the example of the originator, Dr. Hardy, tested the local power of the anæsthetic to assuage the pains of cancerous ulcers. The cases were those of ulceration of the interior of the rectum, accompanied by most severe suffering, such as ordinary sedatives were insufficient to calm. M. Conde employed a bottle containing a sufficient quantity of chloroform. Its mouth was occupied by a well-fitting cork, through a hole in which a gum-elastic catheter was passed. The sound was introduced so far, that its apertures were in direct contact with the ulcerated surface. The vaporization of the chloroform was commenced; first, by the application of the hands to the bottle which contained it, then by bringing near it a heated stove. The patient experienced a slight pricking sensation, which took the place of the cancerous pains. This sensation extended upwards towards the colon. From the rectum some gas escaped, having the odor of chloroform. The sufferings were quickly appeased, but the most remarkable circumstance was that the pulse, which at the commencement of the experiment was accelerated, fell first to its natural rhythm, and then sunk to sixty beats in a minute. The ease, however, bestowed by the chloroform, was not limited in its duration by the effect produced on the pulse. For a week the pains did not return, nor was it necessary to reapply the anæsthetic for the whole of that period." ("El Heraldo Medico," June, 1854, p. 165.)

ART. 70.—Instructions for using benumbing Cold in Operations.

By DR. JAMES ARNOTT.

(Medical Times and Gazette, Nov. 11, 1854.)

A piece of gauze (formed, for the sake of convenience, into a small net or

bag), the components of the frigorific mixture, a canvas bag or coarse cloth, a mallet or flat iron, a large sheet of paper, a paper-folder, and a sponge, constitute all the articles required for congelation. The common frigorific of ice and salt will generally possess sufficient power; when greater is required, saltpetre or an ammoniacal salt may be added. Every systematic work on chemistry contains tables of frigorific mixtures, as well as instructions for making ice, which, when but a small quantity is required, may be thus artificially procured almost as at little expense as from the fishmonger.

A piece of ice the size of an orange, or weighing about a quarter of a pound, will be sufficient for most operations. It is put into a small canvas bag or a coarse cloth, and beaten, by the quickly-repeated strokes of a mallet or flat iron, into a fine powder. As it is important that the powder should be fine, it is not ridiculously minute to state, that the bag should be turned in various directions during the pounding, and that the pounded ice, squeezed into a cake by the iron, should have its particles again separated by rubbing the bag between the hands. Instead of pounding it, the ice may be pulverized by the ice-plane.

The pounded ice having been placed on a large sheet of paper, any loosely-cohering particles may be separated by a paper-folder, and the unreduced larger bits removed. Beside it, on the paper, about half the quantity of powdered common salt is placed, and they are then quickly and thoroughly mixed together, either by the ivory folder while on the paper, or by stirring them in a gutta-percha or other non-conducting vessel. If the mixture be not quickly made, the extreme cold of one part of it may again freeze other parts into lumps.

The mixture is now put into the net (which may be conveniently supported and preserved from contact by placing it in the mouth of a jar or ewer), and as soon as the action of the salt on the ice appears established by the dropping of the brine, it is ready for use.

In applying the net, the part which is to be benumbed should be placed in as horizontal a position as possible; and it is well to raise the net for a moment every three or four seconds, in order to secure the equal application of the frigorific, and watch its effect. If the part be not horizontal, it may be necessary to hold the gauze bag containing the frigorific against it by the hand covered with a cloth; and if the net does not cover the whole of the surface to be benumbed, it must be passed to and fro over it. A moistened sponge placed lower than the net will absorb the fluid escaping from it, or this, on some occasions, may be allowed to drop into a basin placed underneath.

The procedure, as now described, may appear not only troublesome, but as requiring much time. The truth, however, is, that after one or two trials it is unlikely that any mistake will be committed, and the time occupied by the preparation of the mixture and its application should rarely exceed five minutes. So simple is the apparatus required, that, in cases of emergency, I have frequently procured everything but the ice at the house of the patient. The application of a solid brass ball which has been immersed in a freezing mixture, or a thin metallic spoon or tube containing this (with or without ice) is quite as easy.

The effects of this mode of applying intense cold are various, and their succession is as follows:

When a well-prepared frigorific mixture is brought in contact with the skin, a certain degree of numbness is immediately produced. The skin is rendered paler than natural, but there is hardly any disagreeable sensation produced, not even of cold. In about half a minute, the whole of the surface in contact with the frigorific becomes suddenly blanched, evidently in consequence of the constriction of its bloodvessels. This change is accompanied with a feeling of pricking or tingling, such as that produced by mustard. If the application be continued, a third effect is produced; the adipose matter under the skin is solidified, and the part becomes hard as well as white. The tingling is increased by this; but, unless in the most sensitive parts of the body, as the hand or lower part and front of the forearm, it is rarely noticed or complained of. Although this uneasy sensation soon subsides, there will, if the temperature of the part be not allowed gradually to return, and if the cold has reached the stage of con-

gelation, be a renewal of it on the adipose matter again becoming fluid. This gradual return of the natural heat is insured by placing a little powdered ice on the part, or a thin bladder containing ice and water.

The question, how far the refrigeration should be allowed to proceed, or which of the three stages just described should be reached, has been answered differently by different operators. In many of the slighter operations either of the first stages will be sufficient, and the measure just mentioned for effecting a gradual return of heat will then be unnecessary. If congelation of the fat is produced, and the operation is proceeded with before it returns to its fluid state (which is of advantage when it is important to prevent bleeding), there may be required, as Mr. Paget has observed, a modification in the handling of the scalpel; not only, however, is there a certainty that the insensibility both in degree and continuance will be then sufficient, whether the incision is made before or after the fat again becomes fluid, but (what is of equal importance) that antiphlogistic effect is secured, which prevents those consequences which so often prove fatal under common circumstances. On other points there have been great differences of opinion, though probably the results have not been so different as might have been expected. Dr. Wood, of Cincinnati, and M. Richard, of Paris, use frigorifics differing from each other in power, as much as 30° Fahr.; and Mr. Ward applies the frigorific for only one minute, while Dr. Hargrave applies it for five. Perhaps the longer congelation is continued (and it may be safely continued for double this period) the deeper and longer continued the produced anæsthesia may be; but it were unreasonable to prolong an operation inconveniently in order that there shall be absolutely no feeling. In exhibiting chloroform the surgeon is not authorized to give a very large and very dangerous dose in order that the insensibility shall be absolute. But if it should appear that a certain continuance of congelation is necessary to insure its antiphlogistic power, this would be a sufficient reason for always so continuing it.

SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(A) CONCERNING THE HEAD AND NECK.

ART. 71.—*Sight given to a person born blind after 22 years of Blindness.* By Mr. CRITCHETT.

(*Medical Times and Gazette*, Nov. 23 1854.)

We hope to hear more of this very interesting case on a future occasion, but at present, the details are very scantily supplied. The cause of the blindness was congenital capsular cataract.

CASE.—Jane S—, æt. 22, was brought to the Royal Ophthalmic Hospital in the spring of 1849, suffering from cataract in both eyes, with slight internal strabismus, and considerable involuntary rolling and oscillation of the globes from side to side. The corneæ were bright; the anterior chambers large; pupils small and irregular, and filled with an opaque white substance; perception of light was good. She had frequently been operated on before. Mr. Crichton first succeeded in detaching the adherent irides from the capsules by the usual needle operation, the puncture being made through the cornea. By a second proceeding he made a small opening through the scleroticæ, and dragged the capsule from the sphere of vision by means of a hook in one eye, and fine forceps in the other. Then, to remedy the oscillatory movement, which prevented the impression of any object distinctly upon the retina, he divided, first the internal, and then the external recti muscles. The sight is now improving, and by education she is slowly beginning to make some valuable use of her newly acquired sense.

ART. 72.—*On the employment of Chloroform in operations on the Eyeball.*—By Mr HAYNES WALTON, Surgeon to the Central London Ophthalmic Hospital, &c.

(*Medical Times and Gazette*, Jan. 27, 1855.)

The following remarks occur in a clinical lecture :

"Most unquestionably, in infancy, chloroform does afford very great assistance; for, without it, resistance on the part of the little patient is certain. You must have witnessed repeatedly the difficulty there is, in certain diseases, in unclosing the eye of an infant so as to obtain a satisfactory view; and surely you cannot forget the little battle that ensues, and the terrible screams that accompany and follow the attempt. The very diminutiveness of the organ, whereby there is much less room for the use of the fingers and for instruments, together with the great delicacy of the parts, demand the utmost exposure of the surface of the eyeball, with the greatest steadiness. In former years, the operation for congenital cataract was frequently postponed, because these desiderata could not be commanded; and I believe that occasionally in the present day their acquisition is considered impossible, and an operation delayed to the great detriment of the patient. I strongly suspect that the reason why the posterior operation for 'solution' has been so frequently advised in infancy, is because of the greater nicety required to perform the anterior one; and you will at once understand, that, without the paralysing effect of chloroform, to retract the palpebræ, introduce a needle in cornea near the circumference, direct the point in the manner desired against the capsule of the crystalline lens and the lens itself, without touching the iris, or using injurious force, is no easy matter, or, at least, it may not be easy. True it is, that a modern lid retractor, of silver wire or steel, removes some of the difficulty, but only a part, for the difficulty of securing the child, as well as other obstacles, still remain.

"Again, from what I hear, and indeed from what I see, it would appear that, before the use of the anæsthetic agent, the operation for congenital cataract was not unfrequently left unfinished. The capsule which blocked up the pupil was not always removed; and the operation, in any given case, was more often repeated, not merely from the erroneous idea that then existed, and unfortunately still does exist, about repeating needle operations; but also on account of the difficulty that frequently prevented the surgeon from carrying out his previous intentions.

"With children, and young persons in general, even when an operation is painless, there is an expectation of something worse than what is actually felt, and generally a deficiency of resolution, that renders it impossible for them to be sufficiently quiet without violent resistance, or the employment of mechanical restraint; and failures and mishaps are more commonly due than could be supposed, to the unsteadiness of the eye. If I had noted down all the instances that I have witnessed of foiled endeavors, they would form a large page in my note-book.

* * * * *

"I now pass to those operations on the adult eye, in which we may receive considerable assistance from the insensibility of the patient. It is evident that here there should be a distinction between such cases as require chloroform merely because of lack of moral courage, and those in which it is of positive advantage under any condition; as in the one, we may leave the choice to the patient, in the other, it is our duty to recommend it; as it is a fact that, with the fullest consent and greatest determination on the part of a patient, indeed, with a resolution that could endure a limb to be severed from the body without a groan or a cry, and with every desire to assist the operator, there are cases in which anæsthetic sleep may be advantageous. The majority of operations for artificial pupil, especially where the proceeding is complicated, and requires the use of more than one, or the re-introduction of the same instrument, falls under the latter category. An eye, for the most part, that requires this aid, is much damaged; the parts with which we have to deal are altered, and the vitreous humor is too frequently disorganized; so that we need the greatest steadiness of the eyeball, with long continuance of a given position, and an absence of much

pressure. Now, the movements of the eye-ball may be quite involuntary, and the eyelids will twitch, in spite of the most resolute will. But not the least disadvantage of consciousness is the compression that the straight and oblique muscles can and do exercise in such operations. When acting violently, they exert considerable influence; and the effect of such an agency, at such a time, is always hazardous, in several ways. Again, in many operations of general surgery, the sooner the manipulation ends, and the instruments are out of the body, the more certain is the result; this is doubly true of the eyeball. These remarks may be said to apply, in the main, when the eyeball is to be opened for the extraction of any body, be it capsule, animalcule, or any particle driven into it from without, when decided difficulty or intricacy is apprehended.

"I have purposely delayed till now to refer particularly to the formation of an artificial pupil in an infant or a child, because, after what I have said, you may the better appreciate the difficulty attending the execution of such a task, and the better recognize the assistance to be derived from a perfectly passive state. An infant that has lost its pupil from purulent ophthalmia, or any other cause, is not now doomed to darkness till the adult period, or, at least, need not be, as in past years. We can operate on the smallest eye, and the consent of the patient is not necessary.

"The extraction of a cataract may undoubtedly be better performed under the influence of chloroform, both when there is a certain deficiency of moral courage, and when there exist conformations of the eye that render the operation peculiarly difficult, and requiring more than usual dexterity. But as it is after the meridian of life, and often in the very aged, that extraction is needed, we should be careful not to use chloroform needlessly. In the early period of our existence, the risk of a fatal termination is exceedingly small. Not so, however, in the old and enfeebled, in whom the heart is so often diseased by being degenerated,—a state which the most rigid scrutiny during life may fail to detect. Disease of the heart, however, has not been always found in those who have been killed by chloroform. Remember, too, that the operation is unattended with pain when well executed. Therefore, you should not use such an agent as a matter of routine, but withhold it when it may be dispensed with; and whenever you intend to employ it, exercise the most searching scrutiny as to its admissibility. We should not lightly place an aged person in a state so closely resembling apoplexy that the most astute physician could not, at the moment, point out the difference.

"Timidity, and the accompanying restlessness of a patient, may render it impossible to operate successfully. I have seen this over and over again, even under the hands of operators who have not been surpassed in this kingdom for self-possession and brilliancy in execution. On each occasion, the eye was either lost or much damaged, from the unavoidable results of operating against the patient's resistance. Here chloroform removes all difficulty.

"It remains for me to mention those physical peculiarities of the eye which impede extraction, and which may be surmounted by the aid of chloroform. They are mainly those that present impediments to exposing and steadying the eyeball sufficiently to enable the cornea to be divided in an ample manner, such as a sunken eye, a narrow palpebral aperture, unusual prominence of the orbital ridge. In any of these states, more pressure with the fingers is generally required than the eye will bear. During stupor, the eyelids can be more widely extended, and the eyeball fixed with a lightness of touch that would, on account of the peculiarities, be insufficient during sensibility; there being, in fact, all the difference between involuntary resistance, however slight, and absolute quiet. Beyond this chloroform does not assist us.

"When a patient has tolerable fortitude, at all events whatever be his mental emotion, so long as he remains master of his will, and can direct his eye to the position desired, and there are not impediments to exposing his eyeball to the required extent, I would rather that he retain his senses during the operation, for then I believe that the crystalline lens is better started from its position, that it escapes more readily, and that the pupil is the more quickly restored to its natural state, and the iris less liable to prolapse after the terrible stretching it

has received. Even supposing this not to be the case, and things are equal, is it not far better to save an aged person, if only from all the formality and distress of an inhalation? Is it not better to see a patient rise and walk to his bed or couch, rational and thankful, than for him to be removed, half-conscious, sick, miserable, and requiring careful and anxious attention, both on account of the constitutional effects of the chloroform, and the injury he might inflict on his eye? At a meeting of the Royal Medical and Chirurgical Society, on the 14th November, when a paper on an ophthalmic subject was read, Mr. Ferguson asked to what extent chloroform was employed in operations on the eye, meaning the eyeball, and with what success. Mr. Dixon said that a patient might not vomit soon after the inhalation of chloroform, but he might remain twelve or twenty-four hours in a sickly, squeamish state, with but little appetite for food. This was more injurious than vomiting, for it was of the greatest importance, especially in old persons, that the nutrition of the patient should be well maintained, and the eye kept perfectly at rest.

"I have several times calmed the fears of elderly persons on whom I was about to perform extraction, and dissuaded them from inhaling chloroform, and in every instance I have been thanked for my advice. I have been asked repeatedly, even by patients, if the anæsthetic sleep does not give confidence to the operator, and enable the operation to be the better done. I can only say, that if, in any given instance, this is likely to be true, the timid surgeon had better avail himself of every admissible assistance that is likely to restore sight to his patient. He had better narcotize him, and, if needs be, stimulate himself.

"I shall not enter into the details of preparing a patient for taking chloroform, the mode of giving it, nor the after treatment. This I have dwelt on elsewhere; but I will tell you,—be certain of insuring complete insensibility before you begin to operate, that all the steps of the operation may be over before the patient is sensible, for you can have no greater misfortune than for him to awake before the termination, and to commence struggling. There is a particular point in the after treatment that must be attended to, the neglect of which has cost several eyes; and this has induced me to say in my work on the eye: 'Except the operation for the extraction of cataract, or the division of the cornea to a like or nearly equal extent, for any other purpose, there is no operation on the eye in which well-founded objections exist to the previous use of chloroform or ether as anæsthetic agents. In the exceptions mentioned, the objection arises from fear of vomiting, and the loss of the vitreous humor. It is true, that vomiting is but the occasional effect of the use of these agents, and it can nearly always be prevented by emptiness of the stomach previous to inhalation, and which is secured by enjoining a strict fast for four or five previous hours; but, after every precaution, vomiting may occur, or severe retching, which is equally injurious.'

"I wrote this from instances that had come under my notice, and I dreaded to employ the chloroform. Subsequent experience convinced me that all necessary precautions had not been used. If the eyelids are carefully retained together with court-plaster, there is little if any ground for misapprehension, except there be that degree of vomiting which could perhaps arise only under an absence of those preliminary precautions to which I have alluded."

ART. 73.—*The advantages of the Ophthalmoscope.*

By DR. E. BADER and MR. ROBERTS.

(*Medico-Chir. Rev.*, April, 1855.)

In this paper the authors give a full description of an ophthalmoscope, of the manner of using the instrument, and of the phenomena which are brought to light by its use. The advantages which have been already derived from its use are, in their opinion, the following:

"1st. The possibility of detecting the slightest impediment to the passage of light through the lens.

"2d. The possibility of seeing the reason of the frequent unsatisfactory result of tearing through membranes occluding the pupil.

"3d. The advantage of being able, in many cases, to see (through the cataractous lens) the state of the parts behind it—as the vitreous humor, whether healthy; retina, whether detached, &c.

"4th. The certainty of not mistaking an anæmic for a congested condition of the internal tissues.

"5th. The advantage of not treating a patient who is amaurotic from a detached state of the retina with too energetic medicines."

ART. 74.—*A simple mode of operating in Fistula Lachrymalis.*

By Mr. BICKERSTETH, of Liverpool.

(*Edinburgh Monthly Journal*, April, 1855.)

"As far as I am aware," writes Mr. Bickersteth, "it has hitherto been considered essential to the success of the operation for fistula lachrymalis, that the point of the knife should pass into, and be carried along, the lachrymal canal before attempting to introduce the style. As this is a proceeding which required some tact and minute anatomical information, it has at all times received from surgical authors considerable attention, and long and complicated directions are common, describing the method to be adopted to secure its ready and safe performance. The French writers have, as usual, surpassed the English in the minuteness of their description. Thus we have the steps of this little operation divided into the 'Premier temps,' the 'Deuxième temps,' and the 'Troisième temps,' and half a page or more devoted to the discussion of each. Desmarres, in his work on eye diseases, when speaking of the 'premier temps,' says: * * * 'Et je lui recommande de tirer l'angle externe des paupières pour tendre les parties; et surtout pour faire saillir le tendon de l'orbiculaire. Ce tendon représente alors une ligne horizontale formant le côté supérieur d'un triangle dont le côté inférieur légèrement courbe est tracé par l'orbite. Partant du sommet du triangle, je compte de dedans en dehors 4 à 5 milli-mètres, et là, je tire une ligne verticale dont la hauteur n'ayant pas plus de 5 milli-mètres, mesure la base du triangle dont je viens de parler. Je partage cette ligne en trois parties égales, et c'est à la réunion du deuxième tiers inférieur avec le tiers supérieur que la ponction sera faite—Ces dispositions prises, &c., &c.

"The utter futility of such a complicated plan for finding the proper point to open the lachrymal sac, must be obvious to all practical surgeons, for in the vast majority of cases requiring this operation, the swelling and tumefaction are such as to render it altogether impossible to make these dispositions. And when there is little or no alteration of the external parts, and the operation is desirable, nothing can be more simple or effectual than to feel the orifice of the canal, by pressing the nail of the fore-finger deeply downwards immediately below the tendo-palpebrarum, and to introduce the knife, guided upon the nail, directly into the passage. This, in fact, is the proper method of proceeding whenever it can be adopted, but generally it is impracticable from the cause just mentioned. To pass the knife directly into the canal must be more or less a matter of guess-work.

"Until a recent period I was in the habit of judging its position by observing precisely its relative situation on the unaffected side, and then bearing this in mind, I was generally able to direct my bistoury at once into the obstructed passage. However, a case occurred last September, in which, owing to the almost horizontal direction of the canal, I signally failed, although after a good deal of poking about with the probe I succeeded in finding the passage, and then in introducing a style which passed without unusual resistance. The patient quickly recovered, but after the first few days a good deal of trouble was experienced in keeping the style from falling out, when she bent the head forwards.

"This case naturally led to reflection regarding the pathological nature of obstruction in the lachrymal canal. It is no doubt various in different cases. It may arise from tumors occluding either extremity; it may be caused by necrosis of the bony textures entering into the formation of the tube, and this is by no

means uncommon in children of a strumous habit; but by far the most frequent cause is from the extension of inflammation from the lachrymal sac to the lining membrane of the canal. Swelling takes place, and as an almost inevitable consequence the passage is choked up by secretion, and by the tumid state of its mucous membrane. When once produced, this state of matters may continue indefinitely, unless remedied by mechanical means; but I am not aware of any reason for believing that the canal ever becomes so completely filled up by densely organized material that the passage is obliterated, and a necessity created for using the knife in order to establish a new canal. Certainly, if such cases do exist, they form the exception to the general rule.

"With this view of the subject I have ceased to operate as before, and now content myself by making a simple puncture into the abscess or lachrymal sac; and then introducing the style, guide it to the orifice of the canal, and with gentle pressure pass it along the tube. The ease and simplicity of this method of procedure is surprising as compared with the usual plan, and I believe it will be found very generally practicable, and equally efficacious in restoring the canal to a healthy condition. During the last five months I have adopted this simple means in six consecutive cases of confirmed fistula lachrymalis, with results at least as satisfactory as by the former system. In one case the fistula was of eighteen months' duration, yet the style passed without difficulty, and the patient made a rapid and complete recovery. In another case the patient—a nervous and excitable female—could not bear the idea of being cut, I therefore insinuated the style along a fistulous opening, which fortunately happened to be nearly over the duct, and succeeded in passing it into the canal without trouble and without pain. She also made an excellent recovery, but an ugly scar remained from ulceration caused by the pressure of the style against the fistulous orifice, which was not quite over the canal."

ART. 75.—The quantity of Sulphate of Atropine requisite for Dilatation of the Pupil.

By M. F. C. DONDEES.

(*Nederlandsch Lancet*, March, 1854; *Edin. Mon. Jour.* Dec. 1854.)

Amongst the narcotics which induce dilatation of the pupil, belladonna occupies the first place. Its best preparation is the sulphate of atropine, which in weak solution has no irritant effect, and is free from that mechanical action which may be objected to the extract of belladonna, while, through its uniform composition, it can be applied in precisely regulated strength.

The English were the first to introduce this preparation into practice. In London it is generally used in the proportion of 4 grs. of sulphate of atropine to an ounce of distilled water. A single drop of this, retained in contact with the cornea and conjunctiva for only a few instants, produces, in twenty to twenty-five minutes, a *complete dilatation, with immovability of the pupil*.

Such a dilatation is desirable and even necessary to obviate synechia, synizesis, prolapsus iridis, &c., and also as preparatory to the operation for cataract, in which the pupil has so great a tendency to contract. It would also be highly advantageous, when it is wished to dilate the pupil, in order to examine the deeper-seated parts, the lens, the vitreous humor, the retina, and the choroidea, with the aid of the ophthalmoscope; but there is here an important counter-indication, in the marked disturbance of vision which is temporarily induced by it. Besides the intolerance of light, which annoys some, the seeing of small objects, as in reading, is rendered almost impossible for from four to eight days, in cases where this could be accomplished readily in ordinary states of the pupil, so that most persons complain of it bitterly. In cases of amblyopia also the patient becomes usually less able to distinguish objects during several days; and shows unnecessary alarm lest the instillation should have injured the sight permanently, notwithstanding the forewarning, which I have never neglected, that the effects was merely of a temporary nature.

The objection, thus occasioned, led me to the inquiry, whether it was not possible to fulfil our purpose, without exposing the patient to the inconvenience of which he thus justly complains. One obvious course was, to employ weaker

solutions; and yet I continued for long, like others (it may be said in excuse), to pursue the old routine, and to use, in all cases, the solution of gr. iv to the ounce of water. Dr. De Ruiter ("Nederlandsch Lancet," 1854, p. 464) had already stated, that a drop of a solution, in which was contained not more than $\frac{1}{125000}$ th of sulphate of atropine, when kept some time in contact with the eye of a dog, sufficed to produce a dilatation lasting for twenty hours. Further experiments on dogs have shown that a solution with a proportion of $\frac{1}{36000}$ th of sulphate of atropine, induces a powerful dilatation in ten to fifteen minutes, which disappears only at the end of four days; that a solution with $\frac{1}{21600}$ th, five to ten minutes in contact with the eye, causes also strong dilatation, and even sometimes immovability: that a solution with $\frac{1}{12500}$ th, kept five minutes in contact, gave a good dilatation at the end of an hour, which lasted eighteen hours; that with a threefold dilution, and the same time of application, a perceptible dilatation still followed, and that it was only upon a sixfold dilution, and therefore with $\frac{1}{75000}$ th, that the effect became doubtful. The sensitiveness of the eye to atropine, indeed, excites astonishment, when we consider that of the single drop of the attenuated solution, which suffices to produce dilatation, probably not a fiftieth part is absorbed.

At my request, Dr. De Ruiter has also investigated the sensibility of the human eye to atropine. It seems to be somewhat smaller than in the dog; yet is so strong that, where it is desired to examine the internal parts of the eye, a much weaker solution than that ordinarily employed is sufficient to produce a good result. I consider it superfluous to communicate the various trials made upon man. It is enough that they have led me to adopt the following solutions:—

1. Of gr. iv of sulph. atropini to an ounce of distilled water, as preparatory to operations, to prevent threatening synechia, synizezis, or prolapsus iridis, and to increase the capacity of sight in central cataract, or in central opacity of the cornea, &c.

2. One part of this solution, diluted with fifteen parts of water, in order to induce full dilatation, with transient immovability of the pupil, with a view to a full examination of the internal parts, in all directions. The dilatation ensues after thirty to forty-five minutes, and ordinarily, in twenty-four hours ceases to disturb the vision.

3. The same solution, diluted with eighty parts of water, that is, one part of sulph. atropini with 9600 parts of water; of this I make use in far the largest proportion of cases. One or two drops of this solution, held for a few seconds between the eyelids, causes, in thirty to sixty minutes, a dilatation sufficient for the examination of the greater number of eyes. The dilatation, however, is not so strong as perceptibly to injure the vision, and in eight to thirty-six hours it has wholly passed away. I esteem it a great advantage in common cases to make use of this dilute solution.

ART. 76.—*A Plastic operation for the restoration of the Lower Lip.*

By Mr. TEALE, Surgeon to the Leeds General Infirmary.

(*Medical Times and Gazette*, Dec. 23, 1854.)

This operation (which is described in a paper to the Royal Medico-Chirurgical Society) consists in the formation of two lateral flaps from the everted lip and neighboring portions of the cheeks, and in uniting them in the mesial line, above the central portion of the base of the everted lip; or, in other words, in building up a new lip upon the base of the old one. Two vertical incisions about three quarters of an inch in extent, are made through the everted lip down to the bone, leaving between them the central portion of the lip, of an extent equal to half the distance from one angle of the mouth to the other. From the lower end of each of these the knife is carried in a curving direction upwards and outwards, so as to terminate about one inch from the angle of the mouth, opposite the second molar tooth of the upper jaw. The two flaps thus marked out are detached from their connections with the bone, the mucous membrane uniting them to the alveoli being freely divided. Lastly, a bare surface is made along the upper border of the central portion of the everted lip by a transverse line of incision

near the junction of the lip with the alveoli. The lateral flaps are then united by twisted suture, and two or three interrupted sutures to each other in the median line and to the central portion of the lip below.

ART. 77.—*The treatment of Salivary Fistula.* By M. RUDOLFI.

(*Gaz. Med. Italiana*, 1854; and *Gaz. Méd. de Paris*, Dec. 16, 1854.)

The plan which is here described is recommended by its simplicity as well as by the success which has attended its employment. It ought, at least, to have a fair trial before having recourse to severer measures.

CASE.—A man, æt. 28, strong and healthy, was operated upon, in July, 1853, for a cyst in the course of the duct of Steno. Three days afterwards, saliva was found to escape from the wound.

First of all, careful pressure was made with small pledgets of lint. The result of this treatment was, that a painful and red swelling formed in the neighborhood of the parotid gland. Attempts were then made to close the wound with a silver needle and a twisted suture; but this plan did not answer, and after four days the saliva escaped freely from the punctures made by the needles. After this a steel contrivance was used, which kept the edges of the wound in contact throughout their whole extent, but this the patient could not bear.

M. Rudolphi next bethought himself of collodion. He carefully dried the edges of the fistula, and applied two drops of the solution, which presently dried up, and left the part covered with an artificial cuticle. The day following, he thickened this pellicle by dropping more collodion upon it, and so on the next day and the day following; and the end was, that in eight days the patient was perfectly well, the fistula having been closed from the time of the first application of the collodion.

ART. 78.—*Dryness of the Tongue a consequence of Nasal Polypus.* By Dr. BENTLEY, Physician to the City of London Hospital for Diseases of the Chest.

(*Medical Times and Gazette*, March 3, 1855.)

Contributions towards an accurate knowledge of the meaning of symptoms, and the indications derivable from them, are of the utmost value, and, as such, the following case appears to be well worthy being brought before the attention of the profession. There is, perhaps, no single symptom upon which practitioners of experience are accustomed to rely with more confidence than upon the state presented by the tongue. Its condition as regards dryness or moisture, which is the one with which we are now concerned, is always held to be an indication of the utmost importance. Every one is, of course, aware that the tongue may be made dry by the continued passage of a current of air over it, as often happens in fevers, &c., when the patient lies with the mouth open. It is probable, however, that whenever this occurs readily, and to an extreme degree, the secretions are at fault likewise, the merely subjective phenomenon of clamminess, and a feeling of dryness perceived only by the patient being the more ordinary products of such exposure. A bad cold in the head, causing obstruction to the nasal passages, and obliging the patient to sleep with the mouth open, will often cause the tongue to feel on waking as dry as possible, but in reality rarely causes it to become absolutely arid, i. e., to the touch or to the eye. The careful observer is, therefore, from a knowledge of these sources of deception, always accustomed, when his patient complains of a dry tongue, to examine closely as to the influence which mere exposure of the organ may have had in producing it.

We are not aware, however, that any observations have as yet been recorded which would inculcate the yet further degree of caution which is taught by the following case. It would seem from it, that not only may nasal obstruction cause the perception of dryness of the tongue to the patient, but that it may cause the important objective symptom of an arid, and absolutely dry streak, to persist without change for months together.

Henry L.—, æt. 32, an omnibus-driver, a tall, florid, and moderately stout man, first came under care on June 3d, 1854. He had been away from work for several weeks, complaining of feeling weak, confused in his head, &c. The tongue was generally red and firm-looking, and presented on its dorsum, for a few lines on each side of the centre, a streak, which ran from tip almost to base, which was quite dry. His lips were red and parched, and the countenance a little bloated-looking. He had very little cough, and complained almost solely of headache. The dryness of the tongue being supposed to indicate some chronic visceral disease, a very careful examination of the chest and abdomen was made, but nothing was detected. To make the story short, we may state, that from this date to December 3d, a period of six months, he continued to attend regularly as an out-patient, once a week or fortnight, and was seen conjointly by Dr. Bentley and Mr. Hutchinson. His peculiar symptoms excited much interest, and he was repeatedly subjected to most careful examinations. During that period, although retaining an appearance of robust health, he always alleged that he could not work on account of his headache. His aspect, to a certain extent, confirmed his description of the headache, for he generally looked confused and heavy, as if in much discomfort. At times, he said, the pain and disagreeable sensations of fulness in the head were such, that "he thought he should go mad." His habits were inquired into, and it appeared that he was a sober man, accustomed to live tolerably well. While under treatment, he abstained entirely from strong drinks. The urine was generally clear and natural in appearance, the bowels acted regularly, and the appetite was fair. Many remedies were tried; repeated blisters to the back of the neck, a long course of small doses of mercury, stomachics, &c., but with only very slight and variable benefit. Once or twice during the period referred to, the notes state that the tongue was less dry than usual, but it never got moist, and generally presented just the same arid streak which it had done at first. The headaches also persisted, and were frequently very severe. The man had, however, not lost flesh. He had suffered no other symptom of disease of the nervous centres, excepting headache, and he still retained a florid complexion. Altogether, the case was a very puzzling one.

On December 2d, attention was attracted to a new feature, by the man stating that he had pain in the right nostril. On inspection, the nostril was seen to be occupied by a growth consisting of numerous soft polypi, which quite filled its upper part, and the lowest of which hung within half an inch of the nasal opening. The left nostril was free from disease, but was occluded by the nasal cartilage, which had been bulged over so as to touch the opposite side. It was now remembered that the man had always carried his mouth a little open, and, on being questioned, he admitted that he had long done so, from a sense of obstruction in his nose. Mr. Hilton, as surgeon to the institution, was now asked to see the case, and extracted at once some large masses of polypus. No great improvement resulted after the first operation; a fortnight later, however, a second was performed, and a yet larger quantity removed. The following note was made a fortnight subsequent to the last. The tongue is quite moist in all parts, it being more than two hours since he drank any fluid. The position where the dry streak formerly was is still marked by the remains of the transverse fissures. For a fortnight past he has been able to breathe freely through his nose, and has had no annoyance either from headache or dry tongue. He feels quite well, is much delighted with his cure, and is intending to return to work.

There can, we think, be no reason for doubt as to the correctness of the opinion, that in the above case the dry tongue and the headache were really caused by the nasal obstruction. The way in which they persisted, in spite of all treatment, until that obstruction was removed, and in which they vanished immediately after its removal, appear to be conclusive on that point. In explaining their occurrence, however, we must allow somewhat to the peculiar constitution of this patient. Some people have habitually deficient secretions, and suffer from parched mouth from much slighter causes than others. No doubt in this instance the man was peculiarly susceptible, his habit of body being what would be popularly termed full and inflammatory. Nasal polypi, however large, or even if occurring in both nostrils, do not usually cause dry

tongue, or any other serious symptoms; indeed, Mr. Hilton, whose experience in these cases has been very extensive, was at first very doubtful whether such could be their origin in the present instance. Admitting, then, that the case illustrates a very rare occurrence, yet it does not, on that account, lose its interest and importance to the practical physician. If so marked and such persistent symptoms may now and then be caused merely by obstruction of the nasal passages, it is but fair to presume that in less degrees the thing may occur more frequently. The moral of the narrative is an evident one, viz., in all cases in which dryness of the tongue or headache occur without apparent cause, examine carefully as to the patency of the nares.

ART. 79.—*On the extraction of Foreign Bodies from the Œsophagus.*

By M. NELATON.

(*New York Journal of Medicine*; *Dublin Medical Press*, March 14, 1855.)

M. Nelaton has collected with care the various modes of procedure for the extraction of foreign bodies arrested in the œsophagus, and he examines in particular the mode of extracting fish-hooks. In speaking of œsophagotomy, this skilful surgeon proposes a proceeding, which, according to him, is simpler than any other operation. Instead of making a lateral incision, M. Nelaton divides the integuments in the median line, as is done in tracheotomy, but making a more extended incision; he then separates, to the same extent, the sterno-hyoid muscles, so that they can be drawn apart by blunt hooks, or if necessary divided transversely, in order to give more space; that done, the isthmus of the thyroid body is laid bare; beneath it is passed a blunt needle, carrying a double thread, in order that two ligatures may be applied: between the two ligatures, the isthmus of the thyroid is divided. The trachea being thus laid bare, the left lobe of the thyroid is separated from it by a blunt instrument, keeping at the same time close to the trachea; at the bottom of this cleft, between the trachea and thyroid, the œsophagus is necessarily found, and is to be opened in the ordinary way. By acting thus, all risk of wounding the large vessels of the neck is avoided, and the operation may be performed without injuring the thyroid arteries.

(B) CONCERNING THE CHEST, ABDOMEN, AND PELVIS.

ART. 80.—*The Yoke-splint.* By Dr. HUNTON.

(*New Hampshire Journ. of Medicine*; and *Dublin Med. Press*, March 21, 1855.)

No special description is given of this splint, but its nature and mode of application is sufficiently expressed in the name. It is recommended for the treatment of fractures of the clavicle, neck of the scapula, and acromion process; and its advantages, we think, are self-evident. Dr. Hunton first used this splint in 1830, and his account of this case will serve to make matters clearer:

I was called to a Mr. Allard in the town of Johnson, Vermont, twenty-one years ago, and was informed that he had dislocated his arm at the shoulder. I looked at the patient, and saw the usual depression in dislocations of the part. I placed my fingers on the deltoid muscle, and perceived the soft yielding usual in such cases, but did not examine thoroughly, as I ought in any similar case, but pronounced it a dislocation and prepared to reduce it. When I raised the arm I felt and heard a crepitus, which corrected my diagnosis. In order to avoid exposing my carelessness, I did not enlighten my assistants, but called for rags and bandage, made a pallet of the rags for the axilla and the figure of eight bandage, and dressed it (as I supposed), *secundum artem*.

I returned home in the evening, three miles, reflecting—this is not the best way to dress a fracture of the cervix scapula. After retiring to bed, I could not sleep, but pondered three hours by the clock, on the fracture I had lately done up, and thinking there is a better way. The thought at length came into my mind to use a splint resembling a sap-yoke; I ruminated until I became satis-

fied that this mode would be preferable to any other I had seen. Next morning I visited my patient, procured a mechanic, and had him adjust a splint according to my direction, have it made to sit easy on the shoulders, stuffed or lined with cotton batting, the length to jut a trifle beyond the shoulders, with a pin near the ends of the splint. Firstly, apply the splint to the shoulder, then put a double kerchief under the axilla of the sound arm, and tie it over the splint, the pin keeping it in place.

The next step is to tie another kerchief under the fractured arm, and bring the top of the shoulder in contact with the splint; place the arm in a sling, and confine it to the side, and the work is done and well done. There are no tight bandages, or unyielding, tight-fitted splints, to cause swelling or inflammation. Lotions or any other applications are seldom required.

This splint is as well adapted to fractures of the acromion process and clavicle, as to those of the cervix scapula. If either of the fractured ends of the clavicle protrude upwards, which is usually the case, lay on a compress, and cause by the splint the pressure required. If extension is required to keep the clavicle in place, insert a small kerchief or a piece of webbing in the axilla, and tie it outside the pin, on the end of the splint, and make the extension which is necessary.

ART. 81.—*Case of amputation above the shoulder-joint.* By Dr. GILBERT, of Pennsylvania College.

(*Philadelphia Medical Examiner*; *Dublin Medical Press*, Dec. 6, 1854.)

This is the second operation of the kind which has been performed, the operator in both cases being the same surgeon. In both cases the disease was medullary cancer, and in each the patient sank speedily. The first occurred in 1847, and is reported in the "*American Journal of Medical Science*" for that year. The present case is thus related:

CASE.—I was requested to visit on the 29th of June, 1854, David Thompson, æt. 24, a carpenter, residing in Nineteenth Street, above Fairview, in this city. Saw him two days subsequently, when he gave me the following history of his case. About the 1st January last, he slipped and fell on the ice, and to break the fall, threw his right arm back and fell upon his hand, which resulted in severe sprain of the shoulder-joint. There being neither fracture nor dislocation, he did not apply for medical advice, but made such applications as are common in domestic practice. During this period he continued to work at his trade, without, however, being able to use his shoulder-joint freely. Motion at the joint becoming more and more abridged and painful, he applied to a surgeon for advice about seven weeks after the receipt of the injury. At this time there was considerable tumefaction of the shoulder. His medical adviser requested him to keep the arm at rest, and used counter-irritants to the tumor, and gave sorbefacients, and other remedies internally. The swelling, however, gradually increased, the shoulder became more painful when motion of the joint was attempted; and during the night a dull heavy pain was experienced, even when at perfect rest.

I made a careful examination, and found a large globular tumor involving the ends of all the bones forming the joint, extending as low down as the insertion of the deltoid muscle, encircling the humerus, obliterating the axillary cavity, and resting upon the chest opposite to the articulation. The surface of the tumor was evenly rounded and free from nodulation; the integument covering it was unattached, and normal in appearance, except a little abrasion of the cuticle and discoloration, produced by the counter-irritants used. The body of the tumor was firmly elastic, without the least fluctuation, as if homogeneous in structure. There was some tenderness on pressure, especially anterior to the acromion, where the principal part of the injury was sustained. By measurement, the circumference of the tumor, taking the axilla and acromion as points, was found to be $19\frac{1}{2}$ inches, whilst the sound shoulder measured $13\frac{1}{2}$ inches. The horizontal arc of the body of the tumor from the chest anteriorly to the chest posteriorly was $14\frac{1}{2}$ inches; on the sound side 9 inches. A line coinciding

with the axis of the lower two-thirds of the shaft of the humerus continued upwards through the tumor would have emerged, as near as we could judge, about $1\frac{1}{2}$ inch anterior to the acromion process, showing that the upper third of the humerus which was involved in the tumor had undergone change of form. In tracing the bone up into the tumor, increase in its circumference was clearly evident, and then it became blended with the general mass. When the tumor was steadied with one hand, the lower extremity of the humerus could be moved in all directions, so as to cause the line of its axis at the top of the shoulder to describe a circumference whose diameter was at least six inches, having the acromion as its centre.

The patient had been, up to this time, able to sit up, and even pass from room to room. Since the receipt of the injury there has been a gradual wasting of the fluids and solids of the body, his weight having become reduced from 170 lb. to 133 lb. His complexion is somewhat inclined to sallowness, but by no means cachectic; his pulse is 112, and quick; appetite and digestion variable; and his alvine evacuations are irregular. There has not been any cough, and the physical signs declare the thoracic organs to be in a healthy condition. Prior to this accident, from his earliest years, he enjoyed uniform and uninterrupted good health, and never had a single symptom of scrofulous or any other constitutional disease. The patient is the youngest of thirteen children, none of whom had struma or any form of cachectic disease. His father is still living, at the advanced age of 76; his mother died, it is said of carcinoma uteri, at the age of 63, when the patient was 17 years old. All his ancestors lived to a great age. His maternal grandmother died recently at the age of over 100. I ordered laxative pills to be taken at bedtime, and syrup sarsap. comp. with iodid. potass., in ordinary doses, three times a day. Locally, tinct. arnica montan.; which had been previously used.

July 3d.—Visited patient; find no change worthy of note; sleeps tolerably well; no pain in the shoulder when quiet; bowels were opened by the pills; appetite has improved. Continue treatment.

8th.—Pulse 108; bowels have required an occasional pill; appetite continues to be moderately good; forearm begins to be œdematous; skin over tumor is becoming brawny, in spots as large as a silver dollar; emaciation is evidently progressing; sleep disturbed; irritative fever at night. Continue treatment with grs. v of Dover's powder at bedtime.

11th.—Symptoms very much the same; tumefaction increasing; measurement to-day $21\frac{1}{2}$ and $16\frac{1}{2}$ inches; brawny spots enlarging; no adhesion, however, between the skin and tumor. At my request, my colleague, Dr. John Neill, was called in consultation.

12th.—Met Dr. Neill; found increase of the unfavorable symptoms; pulse 126; œdema of arm and tumor increasing; general emaciation progressing. Continue treatment.

13th.—No material change. Continue treatment.

14th.—Saw the patient in company with Dr. Neill. Finding that the case was progressing steadily towards a fatal termination, the propriety of performing the operation of amputation above the shoulder-joint was considered. It was agreed that the operation afforded the only hope of relief; but the decision as to the propriety of its performance was postponed. I visited the patient daily; found an aggravation of the symptoms, to which severe nasal hemorrhage was added; pulse 132 to 140; night sweats.

18th.—Met Dr. Neill; unfavorable symptoms progressing; softening of tumor commenced. It was agreed that the amputation ought to be performed, as it afforded the only hope of rescuing the patient from impending dissolution.

All necessary preparation being made, the operation was performed, in the presence of several medical gentlemen, in the following manner:

The patient was placed upon his left side, on a firm table, six feet long and two wide. Dr. Gobrecht (who was present), using Dr. Bond's instrument for retroversio uteri instead of a key, compressed the subclavian artery for which this instrument, on account of its long, bent stem, is admirably adapted. Dr. Neill took charge of the arm to be removed, and I took my place above, or rather behind the head of the patient. A mixture of one part of chloroform to

three of ether was administered. The operation was commenced by an incision made with a large scalpel, commencing at a point below the middle of the clavicle, and continued forward and downward to a point below the acromion; thence backward and upward, and outside the spinous process of the scapula to the middle of this process. The triangular flap thus formed was dissected up; an incision was now commenced at the posterior fold of the axilla, and carried up to the place of termination of the first incision. The muscles under the line of the last incision, as well as the supra- and infra-spinati muscles, which were laid bare by the dissection of the flap, were now all divided. The amputating saw was applied to the spinous process of the scapula, and this portion of the bone was sawn through obliquely, downwards and forwards, to the body of the scapula; and this was next divided above its neck; the clavicle was then isolated at its central point, and cut through with Hey's saw. A middle-sized calin was introduced into the posterior incision, and rapidly carried under the coracoid process, and brought out between the divided ends of the clavicle, severing in its course the subscapularis, pectoralis minor and major muscles, bloodvessels, nerves, and integuments, so as to form the anterior flap; and the amputation was completed.

The subclavian artery was immediately secured by a firm ligature; but so perfect was the compression of this vessel that no blood was lost by it. Six other enlarged arterial trunks required ligatures. The remaining portion of the clavicle and scapula were approximated, and the upper triangular and anterior and posterior flaps were brought together over these, and secured by nine sutures and intervening adhesive plasters; lint wetted with cold water was applied, and the patient carried to bed. The anæsthesia was complete, and so successfully kept up, that the patient was totally insensible to suffering. Only about twenty ounces of blood, principally venous, was lost. Pulse, immediately after the operation, was 120; but in two hours after had increased to 140. Stimulants, anodynes, and fluid nourishment having been administered, it again came down to 122, and tranquillity, with sleep, took the place of the restlessness which was present soon after the operation.

I might here add, the notes which were taken during the after-treatment, but they would occupy a large space, and add very little that is interesting. There seemed to be a constant tendency to sinking of the vital powers, which in the treatment demanded the free use of stimulants, tonics, anodynes, and a nutritious and easily digested diet. Thus the contest was maintained for a period of eight days after the operation was performed, when the patient sank quietly in death. A post-mortem examination was not permitted.

A section of the shoulder, through to the bone, revealed those changes which are consequent upon the growth of a medullary cancer. The deltoid was thin and pallid, and tightly stretched over the tumor, like a fascia; all the tissues exhibited the effects of pressure, distension, and infiltration. The tumor was of that form which Paget characterizes as soft medullary cancer. The interior was composed of a pulpy, brain-like material, rendered somewhat of a pink color by its great vascularity. The deeper portion, that nearest the bone, was softened almost to fluidity: the head and neck of the humerus were entirely absorbed, and loose fragments very much eroded, were lying in contact with the upper end of the shaft. The microscopic characters were such as might have been anticipated with such physical conditions. The cells were very large and numerous, and so filled with oil-globules that the nuclei were often obscured.

ART. 82.—*Cure of Phrenic Hernia.* By Dr. COPEMAN, Physician to the Norfolk and Norwich Hospital.

(*Assoc. Med. Journal*, March 2, 1855.)

Cases of this kind are of great rarity, and Dr. Copeman has, therefore, been at the trouble to collect some of the cases which have been put on record, and to append them to his paper. The case itself is related as follows:

"The brief history is, that I was summoned to a patient, aged 38 years, whom I found in a dying state, with great dyspnoea, cold extremities, and an almost

imperceptible pulse. She was a fat woman, of middle height, the mother of several children, and again pregnant. She had for several years been the subject of umbilical hernia, about the size of a large orange, and caused by exertion during one of her labors. Four days before I saw her, she had been attacked with pain in the left shoulder and arm, extending to, and fixing itself in the region of the stomach. Vomiting soon followed, and became more and more frequent, until everything she took was almost immediately returned. There was no alvine evacuation, but the matter vomited was not stercoraceous. Next came fixed pain in the left side of the chest, and hurried breathing, terminating in death.

"On examining the body, it was found that the peritoneum was perfectly healthy, and there was no constriction in the situation of the umbilical hernia. A considerable portion of the stomach had passed upwards through an opening in the diaphragm large enough to admit three fingers, about two inches anterior and to the left of the natural œsophagean opening. Probably more than a third of the stomach, together with a portion of omentum, both very much inflamed, had escaped through this opening, and excited severe inflammation of the pleura, in the cavity of which they lay. The left side of the chest contained a considerable quantity of serum and recently formed lymph; and the lung, though healthy, was compressed into a very small space. The edges of the abnormal opening in the diaphragm were smooth, and the omentum was firmly adherent to a part of the ring."

Afterwards Dr. Copeman proceeds to say:

"The diagnosis in the present case was very difficult, owing to the existence of several complications. In the first place, the woman was the subject of a large umbilical hernia of several years' standing, produced, it was said, by violent efforts in one of her labors. Constriction of the intestines in this situation, would have accounted for her vomiting, constipation, and death; and it was very natural to look to such a tumor for the explanation of the symptoms. But, on the other hand, there was no tension of the abdomen, no great pain on pressure, no peritoneal inflammation, and the hernia was reducible. Some other cause was therefore to be searched for. Now, it was discovered that the woman was four months or more gone in pregnancy, and the day before her death there were attempts at abortion, with some hemorrhage, and partially dilated state of the os uteri. Disorders of pregnancy have been known to occasion obstinate, and even fatal vomiting. Did the symptoms here depend upon death of the fœtus, disease of the ovum, or anything else producing uterine irritation? Such a view might explain the constipation, sickness, and exhaustion; but there was also a fixed pain below the heart, difficulty of breathing, and total inability to lie on the left side. Again, was gastritis the cause of the mischief? There was pain in the region of the stomach, great sense of heat and pain in the stomach as soon as anything was put into it, and no relief until it was rejected; considerable thirst, and a frequent, failing pulse. The tongue, however, was of a different character from what is usually observed in genuine gastritis; and there was obstinate constipation. None of these views appeared separately to afford a satisfactory explanation: but the *post-mortem* examination cleared away the mystery, and demonstrated the inutility of the remedial measures that had been employed. Would it have been possible, without the above-mentioned complications (which served only to mislead), to have ascertained the real nature of the case in time to make the reduction of the hernia effectual for the recovery of the patient? And could any method of treatment whatever, have effected the reduction of the hernia? With respect to the first question, I think the nature of the disease could not have been ascertained, or perhaps even suspected, until after the mischief in the chest, indicated by the fixed pain and difficult respiration, had taken place; and that of itself, was extensive enough to destroy life. For the pain and dyspnoea, superadded to the symptoms of strangulation, were the index to the *locality* of the disease. With respect to the second question, great doubt must necessarily be entertained. Samuel Cooper says the disease is quite out of the reach of art; and I can scarcely imagine it possible, even in these days of heroic abdominal surgery, that any operative proceeding could have been safely or effectually undertaken. Still the history

of cases implies that, in some instances, phrenic herniæ have occurred in a slight degree at intervals during many years, giving rise to pain, vomiting, and more or less dyspnoea, and then have suddenly disappeared with the symptoms they occasioned; until at last, a portion of intestine or other viscus, too large to return to its natural situation, has passed through the diaphragm and been strangulated, or has caused irreparable mischief in the organs within the chest. These repeated spontaneous reductions would rather lead to the hope that, if phrenic herniæ *could* be ascertained with certainty in an early stage, something might be done to favor the return of the protruded parts; and when such a disease is suspected, the patient should be placed in an upright position, the warm bath and the usual methods of favoring the reduction of hernia adopted; and possibly the taking into the stomach some weighty substance, as quicksilver, which might act by gravitation, would add a little to the probability of restoring the displaced parts to their natural situation. It is, however, unfavorable to this suggestion, that what is taken into the stomach, finds its way into the protruded part, perhaps during the action of vomiting; and, in the present case, the part of the stomach contained within the chest was full, that within the abdomen being empty, or nearly so; and this circumstance would also render nugatory any assistance in diagnosis that might otherwise be expected from percussion."

ART. 83.—*On the value of Cough-impulse as a symptom of Hernia.* By —.

(*Medical Times and Gazette*, Dec. 16, 1854.)

"Several instances have recently come under our notice," writes the Reporter of Hospital Practice in the journal quoted, "illustrating the value of the knowledge of the fact, that in *tightly strangulated hernia no cough-impulse is ever felt*. In all the reducible or merely incarcerated forms, the information derived by making the patient cough, is so great and so conclusive, that it is not surprising that attempts should be made to apply the same test to cases in which strangulation exists. Entire forgetfulness of the condition of the bowel could, however, alone induce any expectation that impulses generated within the abdomen would be communicated to it. In all cases in which the constitutional symptoms of strangulation are present, the diagnosis as to whether the tumor be hernial or otherwise, must be made without reference to its movements during coughing. Much valuable knowledge on other points may, however, be yet derived from the test. If, in the certainty from other signs, that the tumor is really a hernia—there be not the least impulse, a fair inference may be drawn that the stricture is tight. If impulse be felt in the upper part of the neck of the tumor, and not in other parts, the seat of stricture may be accurately determined, being, that is to say, just below the spot where the perception of impulse is lost. On this latter point Mr. Luke has, in his paper 'On the Operation for Strangulated Hernia,' (*Medical Gazette*, 1839-40, insisted strongly, indeed, we believe he was one of the first to direct attention to its value. With regard to the absence of cough-impulse in strangulated hernia generally, our surgical manuals have, for the most part, neglected to make any observation respecting it, while in some, from the terms used, it might be inferred that it was an ordinary symptom. It is still not infrequent to see cases reported in which its absence is noted as having been a source of difficulty and doubt. Most deeply would it be to be deplored should such absence ever lead to delay in performing the operation, since it is, in fact, a conclusive indication of its necessity. We have not made the statement printed in italics above, without first instituting much inquiry among those of most experience, and also availing ourselves of every opportunity which has of late occurred for acquiring data in respect to it. The following sentence in its support we quote from a note by Mr. South, in his edition of Chelius: 'I have on more than one occasion heard surgeons of eminence speak of dilatation of a strangulated rupture on coughing, which, I must confess, I think impossible, if the rupture be more than incarcerated.'

ART. 84.—*The inadvisability of closing the wound by first intention in operations for Hernia.* By M. NELATON.

(*Gazette des Hôpitaux*, No. 8, 1855.)

M. Nelaton is of opinion that every facility ought to be afforded for the escape of any matters which may be formed in the deeper parts of the wound after operations for hernia; for if this provision be not made, the same matter is apt to burrow and excite phlegmonous mischief in the cellular tissue of the neighborhood, particularly in the iliac fossa. M. Nelaton believes that he has lost two patients from this cause, and that many other patients who were supposed to have succumbed from peritonitis, but who presented no signs of peritonitis after death, did in reality die from the same cause.

ART. 85.—*On some unusual circumstances connected with the operation for Strangulated Hernia.* By Mr. QUAIN, Surgeon to University College Hospital.

(*Medical Times and Gazette*, Jan. 6, 1855.)

The unusual circumstances described in the following cases are the presence of certain anomalous cysts or bags, which Mr. Quain is inclined to regard as old hernial sacs, which have become closed at their necks in the canal. Mr. Quain relates four cases:

CASE 1.—This case is one of inguinal hernia, occurring in a gentleman of middle age, who, from having been a corpulent person, had lately been much reduced in bulk. The patient had not previously any symptom of hernia, and he was not conscious of the presence of an enlargement in the groin before the present attack. He was seized, while walking in one of the parks, with pain and sickness, and he had suffered more or less for three days, when my assistance was required by his medical attendant, Dr. Jones.

The tumor, which had fully the size of an egg, was found above the inguinal groove of the right side, covering the internal inguinal ring and the inguinal canal. It was entirely clear of the inguinal groove—without any neck or elongation—extending downwards from the abdominal wall to the thigh; it had therefore none of the position of a femoral rupture. Regarded as an inguinal hernia, there was one peculiarity worthy of notice—namely, that the mass admitted of being grasped between the fingers more completely than is usual in cases of bubocele—almost as completely as a mass of enlarged glands in that situation might be.

After the integuments had been divided, a tumor was met with embedded in the subcutaneous fat, the most prominent part reaching very nearly to the skin. In the first instance, not being prepared to meet with a hernia till after the tendon of the external oblique muscle had been divided, it occurred to me that the tumor now in view might be a fatty one, and that the hernia must be sought for beneath it. But, upon examination, it proved to be the hernia itself, protruded through the external abdominal muscle. The edge of the opening in that structure being notched at its upper part, the bowel was readily returned to the belly, without division of the sac, or any interference with the investments of the hernia. The patient did well; but, upon his making forced exertion, the bowel was protruded again in the same place in a fortnight after the operation. Now, however, it was easily replaced, and was retained with a compress and bandage, which were to be kept on till a proper truss should be procured.

CASE 2.—In another operation, like that in the preceding case, very recently performed, for strangulated inguinal hernia, in a young robust female, a patient of Mr. Coghlan's, I found a considerable part of the protruded mass—which was of large size, and composed of omentum consolidated into a thick lump, with but a small knuckle of bowel—separated from the subcutaneous fat by only a thin transparent membrane, while the rest, the outer part of the rupture, was still bound down by the strong tendon of the external oblique muscle.

In the latter case it seemed obvious, from its altered condition, that the pro-

truded omentum must have lain long in its unnatural position, the symptoms of strangulation having been induced by the recent descent of a knuckle of intestine; and the partial projection of the mass through the tendon of the abdominal muscle, was in all probability the result of the gradual separation of the fibres by pressure from beneath. But the approximation of the hernia to the surface in the former case is not to be accounted for in the same way, for in it there was no omentum, and the tumor was only recently formed. In that (the first case), it might be that the protruded bowel had followed after one of those small lumps of fat which occasionally form over the peritoneum, and gradually find their way towards the surface, drawing behind a tube of the serous membrane, which is then ready to receive a hernia. It must be observed, however, that I have not hitherto seen anything bordering on that condition, except in the usual place of femoral hernia; and, on the whole, I believe it to be most probable that the tendon of the external abdominal muscle—enfeebled as I have occasionally seen it in the same situation, by the white separation of its fibres, which are then held together only by thin transparent membrane—had given way to the hernia opposite to the abdominal ring, instead of compelling it to follow the course of the inguinal canal to the external ring, as happens in an ordinary case.

CASE 3.—A female, aged upwards of 70 years, was admitted ten days ago into the hospital with the common indications of strangulated hernia,—vomiting and constipation, together with a tumor in the groin. It was ascertained that she first had rupture in the same place more than forty years ago, and that she had been troubled with a return of it from time to time, but had not required active surgical interference, though she had not worn a truss. The tumor lay immediately below the groove of the groin, upon the thigh at its middle, and spreading inwards from the middle towards the pubes. It had the size of an orange, but flattened; was flaccid, and painless to pressure. The manipulation of the taxis had no effect whatever in reducing the size of the mass, which resembled, in most respects, an incarcerated hernia,—that is to say, a hernia which, though not reducible, was not strangulated. From this circumstance an operation was not at first suggested. Under the use of opium the symptoms were much abated, and for two days the patient was troubled only with belchings of air; but on the third day from the first occurrence of the symptoms, as vomiting returned at the same time that the constipation still continued, and some abdominal tenderness had arisen, the operation as for strangulated hernia was performed. After an attempt had been made ineffectually to reduce the tumor, when the fibrous structure on the inner side of the neck of the hernia was divided, the large sac which had been felt upon the surface was laid open. It contained serum, but no hernia. Satisfied, however, that a hernia was the most probable cause of the suffering of the patient, and mindful of a former case to be presently noticed, I made a careful examination in the cavity, in the direction of the femoral ring. There was no communication between it and the interior of the abdomen. Instead of that, a narrow circular depression, about half an inch in diameter, was found in the situation of the femoral canal. Within that depressed circle, the membrane, which there felt elastic, was divided, and a knuckle of bowel came into view. The bowel was of a dark-brown color, and was separated from its proper sac only by recently-effused lymph. The operation was completed in the usual way. Some days afterwards, while the patient was going on favorably as regards the hernia and its effects, she was seized with a severe attack of bronchitis, under which she sank.

The matter of chief importance in this case was the fact of the strangulated bowel being altogether masked by the large serous bag, which, not partaking in any degree in the inflamed condition of the hernia, was calculated to mislead as to the real nature of the cause of the patient's suffering.

CASE 4.—A few years ago a case was sent to the hospital, by Mr. Walter Bryant, which agreed with the preceding case, in the fact of an unusual serous bag being present, and yet differed from it in some not unimportant particulars. A female, æt. 22, was attacked with violent vomiting, and during the forced straining a tumor was formed at the right groin. She had a hernia several years ago in the situation of the present swelling, and she had worn a truss; but the instrument had not been worn regularly. The tumor, which was the size of a

walnut, had the usual position and all the characters of a femoral hernia. It was nearly round, was prominent, and tense. To the touch, it was remarkably tender,—so much so that an attempt to effect the taxis was productive of great pain; and at the same time the abdomen generally was tender. The operation was therefore immediately performed.

The whole prominence was found to consist of a thin membranous bag filled with bloody serum and nothing else. The inner surface of the membrane was of dark-brown color, and was highly vascular. There was no communication with the abdomen. Suspecting that the inflamed condition of the little serous cavity, though it should be the cause—as in all probability it was—of the tenderness of the tumor, would not account for the general symptoms, and that there still might be a hernia, I incised a slightly prominent part of the sac at its upper end, and came upon a small piece of strangulated bowel, invested by and immediately in contact with the proper sac. It may be mentioned that a large quantity of deeply colored serum escaped from the cavity of the peritoneum in this case after the reduction of the hernia, the discharge being encouraged by pressure of the hand over the abdomen. The patient had a severe attack of peritonitis, but she did well.

“These are the only examples of hernia, complicated in the way described, that I have met with in practice. The complication must be a very rare one, for Sir A. Cooper seems not to have met with any case of the kind, though he must have seized on every unusual circumstance within his reach, for the purpose of his work on hernia; and Mr. Lawrence does not make mention of the same condition having occurred under his own observation. Nevertheless, a few cases have been recorded which may be noticed briefly, in order to show the various disposition of the supplemental sac.

“A case is recorded in the 4th volume of the ‘*Medico-Chirurgical Transactions*,’ by Mr. Chevalier; and a few others are described by Breschet (‘*Thèse de Concours sur la Hernie Fémorale ou Mérocèle*’) from the practice of Dupuytren. In Mr. Chevalier’s case, which occurred in St. George’s Hospital, in the practice of Mr. Gunning, John Hunter assisting him in distinguishing the condition of the parts, the hernia, with its proper sac, was pendulous in the unusual serous bag; while the arrangement in Dupuytren’s cases seems to have resembled that of the second case which I have narrated, except, perhaps, that the presence of a hernia was in them more apparent than in mine, when the first sac was opened. Now, where the hernia is actually under view in the first-opened sac, the only mistake likely to be made is that of taking the proper sac for the bowel; but where the hernia is to be sought for after the first sac has been opened, the nature of the case may be altogether overlooked; and the oversight is the more likely to occur should the outer sac happen to be large, as in the case (No. 3) which I lately met with.”

ART. 86.—On Syphilitic Strictures of the Rectum. By M. GOSSELIN.

(*Archiv. Gén. de Méd.* Dec. 1854.)

Strictures of the rectum are not very common, and their causes are not always very obvious, but, according to M. Gosselin, syphilis is by far the most common cause. In this the author adopts what is a general opinion in France. In M. Gosselin’s opinion, however, these forms of stricture are not the consequence of constitutional syphilis, as others suppose; but the direct result of primary chancre about the anus. As to the characters of these strictures, we learn from M. Gosselin, that they are seated very close to the anal orifice, and that they are usually accompanied by condylomata and purulent discharge. The bowel is usually more or less ulcerated beyond them, and upon this accompaniment the chief part of the mischief depends. As to treatment, we learn that constitutional measures are not sufficient, and that dilatation and incision are more effective than any other local measures, repeating these when necessary, for the stricture is almost sure to reappear again in time.

ART. 87.—*On Fistula in Ano.* By Professor SYME.

(Lancet, Jan. 20, 1855.)

After mentioning some well-known points in the surgical history of this affection, Mr. Syme proceeds (we quote from a clinical lecture):

About thirty-five years ago, a French surgeon, M. Ribes, called the attention of the profession to an important point in the pathology of fistula; for while surgeons commonly regarded it as of three characters—viz., blind external, when it opened only at the surface; blind internal, when it communicated with the rectum, but had no opening externally; and complete, when both an external and an internal opening were present—he affirms that both openings always existed, and that the idea of blind external fistula had proceeded from an error of observation respecting the position of the internal aperture, which had been always sought for at the top of the sinus, whereas he showed it to be placed within one inch, or at most an inch and a quarter, from the orifice of the rectum, however high the sinus might extend; and he also pointed out, that provided the incision included the internal orifice, it was sufficient for the cure of the disease. Here you see an improvement pathological and practical. The operation caused very little bleeding, no subsequent dressing was required, and the effect was certain.

It happened that my friend and colleague, Dr. Christison, being in Paris in 1821, became acquainted with the observations of M. Ribes, and on his return here mentioned them to me, at that time house-surgeon to this hospital, and directed me to the "*Archives Générales*," in which they were published. I took every opportunity of testing the truth of this new and startling statement, and found it to be substantially correct. On referring to M. Ribes' paper, however, the explanation which he gave of the origin of fistula appeared to me unsatisfactory. He supposed that it always began by ulceration of the mucous membrane of the rectum, after which a portion of the contents of the bowel escaped into the surrounding textures, and gave origin to abscess there; but I noticed that on opening the abscess no internal aperture was to be discovered by the most careful examination, and that the matter evacuated was not mixed with feculent or gaseous material, but simply a small quantity of well-digested pus. I also observed that a fistula of some days' (or even weeks') standing, had, generally, no internal opening, and it therefore appeared to me, that the mucous membrane of the rectum, although thin and denuded by the abscess, did not give way until after the matter had found vent at the surface, and the external orifice had closed to some extent, so as to confine the pus, and thus cause ulcerative absorption. This, however, is a matter of curiosity, rather than of practical utility. Notwithstanding the importance of the facts observed by M. Ribes, and the publicity which he gave to them, and notwithstanding the efforts which have been ever since made here by myself, and, for aught I know, by others elsewhere, to extend the knowledge of them, yet the greater number of surgeons for a long time obstinately refused to admit their truth, and to modify their practice accordingly.

In 1836, about sixteen years after the publication of M. Ribes' paper, Sir B. Brodie wrote thus: "If the internal opening be at the upper extremity of the sinus, the operation is simple enough. You introduce the forefinger of one hand into the rectum, and with the other hand you direct the curved, probe-pointed bistoury through the external opening into the sinus, and afterwards through the internal opening into the rectum; then, keeping the probe point in contact with the forefinger, you draw the instrument downwards, dividing all the parts below it. If the internal opening be anywhere in the middle part of the sinus, you proceed in the same manner, but a second incision is then necessary, to lay open the upper extremity of the sinus. The probe point of the bistoury must be made to penetrate the tunics of the rectum before this second incision is made. If the sinus has no communication with the rectum, the tunics of the latter must be penetrated as near as possible to the upper extremity of the sinus, the incision being made afterwards in the manner which has been just explained."

In 1837, I published a treatise on "Diseases of the Rectum," in which I explained very fully the views of M. Ribes, and also pointed out the error into which I believed he had fallen with regard to the origin of the disease. In 1844, Sir B. Brodie writes: "The first thing to be done is to find the inner opening. I do not say that you will always succeed in finding it—certainly not the first time; but you will rarely fail if you look for it in the right place. Formerly I often failed, and for this reason—I did not know where to look for it. I used to think that it was to be found in the upper part of the sinus, but it is never found there if the sinus runs high up. You must search for it immediately above the sphincter muscle." Sir Benjamin does not say what his authority for this statement is, so we must suppose it to be original; but, if so, it is curious that, whilst discovering the truth made out by M. Ribes, he has also fallen into his error of supposing that the disease always begins by ulceration of the mucous membrane. For he says: "I believe that this is the way in which fistulæ in ano are always formed—namely, the disease is originally an ulcer of the mucous membrane of the bowel, extending through the muscular tunic into the cellular membrane external to the intestine, and I will state my reasons for entertaining that opinion. The matter is one of great interest as a question of pathology, but it is one of great importance, as I shall show by-and-by, in connection with surgical practice. It is admitted by every one that in the greater number of cases of fistulæ in ano there is an inner opening to the gut, as well as the outer opening; and I am satisfied that the inner opening always exists, because I scarcely ever fail to find it now that I look for it in the proper place, and seek it carefully. I have, in a dead body, examined the parts where fistulæ had existed several times, and in every instance I have found an inner opening to it. This affords a very reasonable explanation of the formation of these abscesses; it is almost impossible to understand on any other ground why suppuration should take place in the vicinity of the rectum more than in any other part of the body, and why the cellular membrane there should suppurate more than the cellular membrane elsewhere. Moreover, the pus contained in an abscess near the rectum scarcely ever presents the appearance of laudable pus; it is always dirty colored and offensive to the smell—sometimes highly offensive, and occasionally you find feculent matter in it quite distinct." Now this I deny, and appeal to the abscesses which you may have seen, or will see before long, and also to the distinct statements of the patients themselves.

The discovery of the uniform existence of an internal opening near the anus may be said to have perfected the operation, but in consequence of the old errors having been so long prevalent, the treatment has not hitherto been nearly so satisfactory as it should have been in the profession at large; and hence the explanation of the fact, that patients affected with fistula in ano, come here from all parts of the country, under the impression that the operation they are about to undergo is a very serious one, and involves long confinement to bed. The operation, though very simple in principle, and easy of performance, is still one that requires care and patience. Whenever you examine a fistula of six weeks' or two months' standing, you must proceed on the supposition that an internal opening exists. The track that leads to it may be tortuous, but you must search carefully again and again, if you fail to find the aperture in the first instance, and be very slow to be persuaded that it is not there. A piece of lint is placed in the wound at the time of the operation, and the only other dressing required is washing the part occasionally with soap and water for a few days.

ART. 88.—*Case of Ligature of the External Iliac for Femoral Aneurism.* By Professor MILLER, of Edinburgh.

(*Edinb. Medical and Surgical Journal*, Oct. 1854.)

This case presents some points of interest in the manner of operating, and in the subsequent progress of the tumor. It is also interesting as another instance of femoral aneurism successfully treated in this way.

William M'Cormack, a plumber æt. 27, admitted into the surgical wards, Royal Infirmary, Edinburgh, under the care of Professor Miller, 27th December, 1853.

Upon examination, a large ovoid and circumscribed tumor is seen lying over the region of the common femoral of the left side, extending about three inches above, and two to two and a half inches below Poupart's ligament. There is a heaving pulsation in every part of the swelling, synchronous with the heart's impulse, appreciable by both the sight and touch, especially by the latter, when a very expressive thrill is imparted to the compressing hand. By pressure on the superior femoral artery below the tumor, the pulsation in the latter is increased, and a distinct "bruit de soufflet" perceived on auscultation. The integuments over the tumor are not discolored; but a few enlarged veins, and the cicatrix of a bubo, are visible. At present there is no pain in the tumor, but there is more or less weakness, with numbness and cramps in the lower extremity.

About the 1st of September, 1853, the tumor first appeared in the form of a small swelling over the common femoral of left side; it was soft and compressible, but returned to its original dimensions as soon as pressure was removed. Distinct pulsation existed in it from the beginning, accompanied with cramps and numbness in the left lower extremity. The patient can assign no cause for the appearance of the tumor, except that his occupation of plumber has frequently required him to lift and carry heavy weights. A month after the appearance of the swelling, the patient strained himself in lifting some heavy weights, and immediately afterwards experienced a "racking pain" in the region of the tumor, which then for the first time assumed a reddened appearance, and continued in that state for some days. Since that period the swelling has gradually increased in size and hardness, preventing the patient from following his usual occupation so well as formerly. He had syphilis about eight years ago, but no mercury seems to have been used in its treatment. The general health appears tolerably good.

December 29.—A consultation having been held, there was not the slightest hesitation in pronouncing the tumor to be an aneurism of the left common femoral artery.

January 14th.—Professor Miller proceeded to tie the external iliac artery. Upon the application of the ligature, the pulsation in the tumor immediately ceased, and it felt more elastic and soft. Four hours after the operation, smart hemorrhage came on; the wound was opened up, and two vessels in the muscular wall were secured; it was then carefully sponged out, and again closed by stitches—the patient under chloroform. About six to eight ounces of blood may have been lost.

Vespere.—Pulse, 120; heat of skin, natural. Sol. Mur. Morph., $\mathfrak{z}\mathfrak{j}$, immediately, and to be repeated, if need be.

15th.—Passed a good night. Pulse 120, soft and compressible; no pulsation whatever in the tumor, and little if any change in the temperature of the leg. Strict antiphlogistic regimen has been enjoined; and the patient has been lying on his left side on a water-pillow, with his back raised and body flexed; the abdominal muscles are thus relaxed, and the discharges can escape freely from the dependent opening.

16th.—Passed another good night; pulse 130.

R Ext. Alcoh. Aconiti, gtt. v;

Aquæ Puræ, $\mathfrak{z}\mathfrak{v}\mathfrak{i}\mathfrak{j}$.

Ft. mist. de qua sum. coch. unum mag. secundis horis.

Vespere.—Pulse 112.

R Ol. Ricini, $\mathfrak{z}\mathfrak{j}$;

Aq. Cinnamom., $\mathfrak{z}\mathfrak{j}\mathfrak{s}\mathfrak{s}$. M. s.s.

Complains of pain in the wound, and has some flatulency; a slight discharge of blood and pus now coming from the wound; water-dressing continued; no pulsation in tumor; limb warm and comfortable, and kept flexed and supported with soft pillows, wadding, &c.

17th.—Has no unfavorable symptom; has had his bed made, and looks cheerful and comfortable; bowels not yet opened, but there is a desire to pass

a stool. Hab. Enema Commun. et repet. s.o.s. Soon after this the bowels were freely moved without pain or effort.

18th.—Has a slight cough, which gives pain in the wound.

R Tinct. Opii Camph., ℥jss ;
Mucilaginis, ℥iv. Mist.
Scillæ, ad ℥viij, misce.
Sig. ℥ss quaque 8tia. hora.

Skin cool ; free from pain ; pulse 88 ; the discharge from wound much increased, with less blood and serum.

20th.—Continues well ; stitches removed from wound ; healthy discharge going on ; skin moist and cool ; bowels twice opened ; pulse 80 ; and no pulsation has returned in tumor.

26th.—The ligatures, with the exception of the one upon the external iliac, have come away ; patient is looking well, and begins to take nourishment.

February 4th.—Patient's recovery progressing rapidly ; complains of slight numbness in left heel and sole of foot ; the ligature upon the external iliac came away ; it had, in all probability, been separated for some days previously. The tumor has begun to diminish in size ; there has not been the slightest pulsation in it since the operation was performed.

20th.—Is gaining strength ; has been ordered generous diet, with wine and porter ; begins to sit up in bed.

March 2d.—Some irritability of the neck of the bladder ; passed the catheter twice.

R Aq. Acet. Ammon., ℥j ;
Spir. Æther. Nit., ℥ij ;
Vin. Antim., ℥j ;
Aque Font., ℥ivss.
Sig. ℥ss quaque 8tia. hora.

—Passes his urine freely now ; his appetite not so good.

R Quinæ Sulph., Extr. Aloes, āā ℥j ;
Extr. Gent. co., ℥ij ;
Con. Ros., q. s.
Fiant pil. xij, quarum una ter in dies sumend.

Has risen from his bed for the first time since the operation, and moves about the ward by the aid of a crutch. The wound is almost entirely closed ; very little discharge now coming away ; tumor much diminished in size, and harder.

7th.—Has been taking rather too much exercise during the last three days. For the first time since the operation, a very slight thrill was felt in the tumor, which is somewhat enlarged again ; ordered to resume and retain the horizontal posture.

8th.—No thrill in tumor, which has again diminished in size.

28th.—Has kept his bed since the 7th ; a large quantity of healthy-looking pus is being discharged from the small opening in the wound.

May 4th.—Has left the hospital on leave of absence, for two weeks. Slight discharge still going on from the small opening in the wound ; keeps water dressing to it, and wears a flannel bandage as a support to the abdomen.

No thrill or pulsation of any kind (with the exception of what was referred to on March 7th) has been felt in the tumor since the time of the operation. A most careful examination of the parts was instituted twice daily, and if any such thing had existed, its presence would certainly have been detected.

At the present date, the patient is walking about, somewhat weak and lame on the left side, with occasional slight discharge from a small fistulous aperture in the centre of the abdominal cicatrix ; the tumor is almost gone, a thickness and fulness remaining in its site.

ART. 89.—*A case of partial Dislocation of the Ilium from the Sacrum without loss of life.* By Mr. SKINNER, of the Bengal Medical Service.

(*Indian Annals of Medical Science*, Oct. 1854.)

Injuries of this kind are not very common, and recovery after them is still more uncommon. Mr. Skinner says, indeed, that he has only been able to find two cases of the kind in the records of surgery.

CASE.—In November, 1853, a young man was thrown from a horse, which reared and fell backwards; in falling, head, hands, and feet were in the air, and the only part of the body which struck the ground was the posterior part of the right hip bone, very close to the situation of the sciatic notch, and the part of the sacrum adjacent,—the fall not being directly upon the back, but inclined somewhat to the right side. Immediately upon touching the ground, the head of the right femur, as if from the extension of force to it, started from its socket, but was restrained from leaving it by the powerful and spasmodic manner in which the muscles surrounding the joint, but more especially the adductors, acted. Directly after the accident, there was an impossibility of either leg being separated from the other, even for a few inches, without being attended with excruciating pain near the pubic articulation;—the stretching, and perhaps tearing of the abductor longus, brevis and pectineus muscles being the cause. In fact, the triangular space in the upper part of the thigh formed by these muscles, and more especially the adductor longus, was exceedingly sensitive to the touch for many days. There was some little difficulty at this time in determining the exact nature of the injury, as the chief and greatest pain extended from the upper part of the sciatic notch, through the acetabulum, to the symphysis pubis, and if the right leg were slightly moved, on a few occasions a grating sound, like the cutting of cartilage or gristle, was heard, and pain felt at the symphysis pubis and just external to it. It was clear, however, that whether anything had occurred to the acetabulum or to the ramus of the pubis, the ilium on the right side had been thrust upwards and backwards, and possibly the sacrum forced a little forwards and downwards (by reason of the peculiar side fall), since the posterior, superior, and inferior spinous processes of the ilium projected upwards and backwards from a quarter to half an inch more than on the sound side. The coccygeal ossicles were jerked out of their places, since there is one situated on either side of the normal or longitudinal disposition of those small bones, just like the transverse bars of a cross. The extremity of the coccyx passes also more directly inwards, or rather inwards and upwards, between the tuberosities of the ischia than is usual. For some few days after the accident, the extremity of the penis was preternaturally sensitive to the touch, and even to the bed-clothes falling near it. For between two and three weeks there appeared an impairment of nervous power in the right thigh and leg, yet much more of muscular power, for, whilst lying down in bed, it was impossible to raise the leg one inch, and there was even difficulty in dragging it over the slightest pucker in the bed-clothes, without the assistance of the hand to raise the thigh and pull up the leg.

It need scarcely be added, that the pain suffered during the first month was intense in the extreme, and that which rendered it less bearable was the inability to lie, sit, or stand, in any one position, for many consecutive minutes. The only way of lying was on the back, it being impossible, through pain, to turn or attempt to turn to either side until five weeks after the accident.

The tuberosities of the ischia were exceeding sensitive, and still continue to be so (Aug., 1854), in a slighter degree, after sitting upon a hard seat, as a cushionless chair, for half an hour. This is no doubt owing to irritation of the sciatic nerves, more especially the small branches of the lesser sciatic and the terminal sacral filaments distributed upon and around those parts. There is still pain in the sacro-iliac joint, and also just external to the symphysis pubis, in attempting to throw one leg across the other sharply and quickly. The ilium projects as much as it did at first; but the patient is now enabled to walk as well as he ever could, although not quite for so long a time.

The means of cure employed was simply rest upon a spring couch, as the

legs and thighs required a continual change of position, and to be raised to ever varying heights to free the individual from pain. The position, however, which was by far the easiest, so long as it could be borne, was that of standing supported by crutches.

ART. 90.—*Sinuses of the Hip depending upon Exfoliations from the Pelvis.*

By Professor SYME.

(*Lancet*, Jan. 5, 1855.)

The practical value of the following remarks is at once apparent. The remarks are part of a clinical lecture upon a case which is given at the end:

"If the treatment of diseases be interesting in proportion to the degree in which they affect the patient's comfort and admit of beneficial interference, the case which we have now to consider seems deserving of attention. That the morbid derangement concerned is no trifling matter will appear sufficiently from the fact that the patient has come nearly 4,000 miles in quest of relief; and unless the results shall differ from those hitherto experienced under similar circumstances, complete recovery will be speedily accomplished, without any pain or other bad consequence of the means employed.

"It is here necessary that you should recollect the distinctions between necrosis and caries. In the former disease a portion of bone dies, and separates from the living substance, so that no obstacle to recovery exists after the exfoliation or detached piece escapes from the position where it is situated; but in the latter, the bone retains its vitality, and obstinately remains in a diseased condition, without any natural limit of duration, except the life of the patient or conversion of the caries into necrosis. It must further be recollected that the dense osseous substance which composes the shafts of bones is chiefly liable to necrosis, and that the spongy or cancellated texture is almost exclusively the seat of caries. Now, sinuses about the pelvis are unhappily met with very frequently as the attendants or consequences of disease in the hip-joint, vertebræ, or sacrum, where the disease, being of an incurable kind, and the part concerned not admitting of removal, any sort of treatment can produce no better effect than a very imperfect degree of palliation, and it has hence been usual to regard such cases as of a very hopeless character. But nearly thirty years ago there happened to fall under my notice a case which showed that such a judgment should not be passed as a matter of course, or without more caution and discrimination than had been supposed requisite. The patient was a young man, aged 28, who, for the preceding seven years, had suffered from sinuses about the hip and upper part of the thigh, which being regarded as proceeding from fistula in ano, had been so treated by the late Mr. George Bell and other surgeons, without obtaining the relief desired. He had then applied to quacks with no better success, and finally, abandoning all hope of recovery, had allowed the disease to pursue its course. It was a considerable time after this resolution that my assistance was asked. I found him extremely emaciated, and so weak that he hardly could leave his bed, with a large abscess of the thigh, and several sinuses about the hip, discharging matter profusely. Having opened the abscess, I examined the sinuses, and found that one, which opened in the fold between the buttock and the thigh, led to the tuberosity of the ischium, in which there was a cavity containing an exfoliation of bone. I therefore dilated this sinus by incision, introduced my finger, and having found an opening between the origins of the extensor muscles, enlarged it by the bistoury, so as to obtain access to the interior, whence I removed a small bit of dead bone. The patient then quickly recovered, and ever afterwards enjoyed good health.

"As there could be no doubt that the exfoliation had caused all the distressing symptoms of this severe and long-protracted case, it became very desirable to ascertain the origin of the evil, which could hardly be attributed to the ordinary influences of cold or external injury. Upon inquiry, it appeared that the patient had first experienced uneasiness after a day's employment in curing herrings, and that the discharge of this duty had required him to stand with his feet apart, alternately stooping and stretching his arms upwards to the full extent, subse-

quently to which he had felt a painful sense of fatigue in the back part of the thighs. It then occurred to me that the disease had originated from over-exertion of the muscles which arise from the tuberosity of the ischium, and that the bone with which they are there connected had suffered in consequence, so as to exfoliate, instead of being excited to præternatural growth, as Sir Astley Cooper, with apparently good reason, thought likely to happen, from inordinate muscular contraction. Several cases of a similar kind, which afterwards occurred, tended to confirm this suspicion; and in a paper on the subject ('*Edinburgh Medical and Surgical Journal*' for 1828) I thus expressed my sentiments in regard to the pathological explanation: "The history of these cases will, I hope, effect the great object of this paper, which is to excite a more discriminating diagnosis and active treatment of sinuses of the pelvis. As to the origin of the exfoliations, I will not at present say much. It seems very evident that they cannot result from the direct effects of violence, since, in all the cases detailed, the bone concerned was securely protected by its situation from any such injury. In all of them (if we except the first, where no information could be obtained as to the origin of the complaint) there was violent muscular contraction, and I am inclined to think that this may have been the exciting cause of inflammation and death of the bone. The subject is curious, and worthy of investigation, but of little importance when compared with the practical benefit which may result from a knowledge of the fact that sinuses of the pelvis sometimes depend upon loose exfoliations, which will not find their way out unassisted, but which may be readily removed artificially with the effect of a speedy and permanent recovery."

CASE.—The patient is T. C—, æt. 24, a blacksmith, in Toronto, Upper Canada. About a year and a half ago he was trying how far he could leap, when his right leg slipped as he came to the ground, and went out sideways from him. He felt shaken at the time, but did not experience actual pain until next morning, when the right thigh was so painful at its upper part that he could scarcely move: the pain was deeply seated, apparently in the very middle of the substance of the thigh, while the upper part of the adductor muscles was very tender to the touch. The pain continued for about two months, at first preventing him from working, and greatly crippling him, even to the end of this time. A lump then began to form at the extreme upper and inner part of the thigh, a little anterior to the tuberosity of the ischium, and the pain gradually subsided. This swelling remained in nearly the same state for twelve months, when, having attained the size of a hen's egg, it was opened by a surgeon, and discharged about a teacupful of matter. Three weeks afterwards another abscess of larger size formed nearer to the groin, and was followed by several others of smaller extent, which were poulticed, and allowed to open spontaneously, while he lay in the hospital of Toronto, with apparently little prospect of recovery. Two medical gentlemen who had been educated in Edinburgh then became acquainted with the case, and, having recognized its similarity to those pointed out by me as dependant upon exfoliation of the pelvic bones, advised the patient to seek my assistance. He accordingly travelled to New York, crossed the Atlantic, and was admitted to this hospital a week ago (on the 30th of October). The patient is now before you. You observe that he is a well-formed, healthy-looking man, that there is no curvature of the spine, or other sign of disease, either there or in the hip-joint. There are several sinuses, one in the groin above Poupart's ligament, and others at the junction of the thigh with the perineum. Through one of the latter the probe passes towards the ascending ramus of the ischium, and there detects a loose piece of bone, which we shall now endeavor to remove.

Chloroform having been administered, Mr. Syme dilated the sinus by incision, introduced his finger up to the origin of the adductor muscles, and having there felt a small aperture, enlarged it by means of a probe-pointed bistoury. He then extracted the exfoliation in three portions, which, when put together, fitted accurately, and constituted a mass which was recognized as the inner margin of the pubic arch, the whole of which is concerned in affording attachment to the abductor muscles.

ART. 91.—*Notes on Lithotrity, with an account of the results of the operation in the author's practice.* By Sir BENJAMIN C. BRODIE, Bart.

(*Lancet*, March 24, 1855.)

These "notes" were communicated to the Royal Medico-Chirurgical Society, in a letter to the President, but as the published abstracts are inadequate, we must defer any detailed notice of them until the notes themselves are published in the "Transactions." In the meantime, we would merely say, that the experience of Sir Benjamin Brodie has led him to the conclusion that lithotrity, if prudently and carefully performed, is liable to fewer objections than almost any other of the capital operations of surgery, the cases to which it is not applicable being very few indeed, and chiefly those in which, from the calculus having attained an unusual size, the danger and difficulty of lithotomy are so great, that no surgeon would willingly, nor otherwise than as a matter of duty, undertake it.

ART. 92.—*On the treatment of Spermatorrhœa.* By M. TROUSSEAU.

(*L'Union Médicale*, Dec. 21, 1854; and *Edin. Monthly Jour.* March, 1855.)

M. Trousseau thinks that the advantages of *Lallemand's porte-caustique* have been considerably overrated, and that there are only certain cases in which its use is productive of benefit. It is very useful where chronic urethritis co-exists with the spermatorrhœa, but where that is absent, he thinks we ought to trust to modes of treatment more suited to the cause of the disease.

The excessive debility induced by spermatorrhœa demands our most serious attention. If, in serious cases, we find neither urethritis nor cystitis present; if we discover neither calculi nor ascarides, nor any other thing which can explain the persistence of the emissions, we ought to ask ourselves whether the disease does not depend upon a condition of the *vesiculæ seminales* analogous to the spasmodic state of the bladder in certain forms of incontinence of urine. Puérile enuresis is not due to atony of the bladder, or to any undue accumulation of urine, but to a spasmodic condition of the bladder. The same phenomenon occurs in the *vesiculæ seminales*; and belladonna, which acts so beneficially in the case of the bladder, is also very useful in this other spasmodic condition. M. Trousseau prescribes accordingly in such cases, powders containing each 1 centigramme of the powdered root of belladonna, mixed with sugar. He orders one to be taken daily during the first week of treatment; two daily during the second, and so on until the patient experiences a sensation of dryness in the throat. At the same time he orders frictions of the perinæum, with an ointment composed of 10 grammes of the alcoholic extract of belladonna, to 20 grammes of axunge. If necessary, he also uses suppositories containing each 10 centigrammes of the extract.

M. Trousseau doubts the utility of cold hip-baths in this affection. They may do good the first time they are used, but although they may temporarily arrest venereal excitation in nymphomania and priapism, this calm disappears on the occurrence of reaction, and the evil is increased.

Heat acts in an opposite manner. Hence M. Trousseau believes that in cases where erotic feelings are conjoined with spasm of the *vesiculæ seminales*, heat is the best sedative which we can employ simultaneously with belladonna. The form in which he employs it is that of bags of heated sand, which he applies to the perinæum for a few minutes, morning and evening. The simultaneous administration of lupulin may be very beneficial; but, where we desire decided anaphrodisiac effects, M. Trousseau recommends, on account of the certainty and efficacy of its action, the bromide of potassium, in doses of 15 grs. to 3ss daily.

ART. 93.—*On the collodion treatment of Epididymitis.*

By M. RICORD.

(*L'Union Médicale*, Sept. 14, 1854; and *Edin. Monthly Jour.* Dec. 1854.)

M. Ricord tried the collodion treatment, as proposed by Bonnafout, in thirty-

eight cases of blenorrhagic epididymitis. And the following are the conclusions at which he has arrived:—

1st. Elastic collodion causes less suffering than ordinary collodion, but more than the other modes of treatment.

2d. It is not so efficacious a therapeutical agent as was imagined.

3d. It does not allay the pain, nor effect a cure more promptly than other modes of treatment.

4th. Its action is principally manifested in engorgement of the subscrotal cellular tissue, and in inflammation of the scrotum itself.

5th. It is only a feeble mode of exerting compression.

6th. If collodion only acts through the medium of the cold resulting from the evaporation of the ether; the application of simple ether, or of cold to the scrotum, would answer equally well.

7th. It is not rational to believe that collodion can cure orchitis and epididymitis simply by protecting the diseased parts from the action of the air.

(C) CONCERNING THE UPPER EXTREMITY.

ART. 94.—*A new mode of removing the Head of the Humerus.*

By M. BAUDENS.

(*Rév. Méd.-Chir. de Paris*, March, 1855.)

M. Baudens prefaces the description of this operation by some general remarks on the subject. The shoulder-joint (he tells us) is the joint which is most easily excised, and no other joint gives such favorable results when so treated. Out of 14 cases which have occurred in his own practice, 13 have been successful,—a fact which proves that resection must be the rule, and amputation the exception, in cases of gun-shot wound of the part. In these accidents the operation ought to be performed without delay.

In operating after M. Bauden's plan it is necessary (1) to keep the head of the humerus in close contact with the glenoid cavity, and (2) to preserve the muscular fibres and nerves. Thus the flap operations are rejected for those by the simple incision; but this incision is not made on the outside, as by White, or in the full front, as by Percy and Larrey, but *on the inside*. This locality is preferred (1) because the head of the bone is most superficially placed in this position, (2) because it can be exposed to the full by prolonging the simple incision into the space between the acromion and coracoid process, and (3) because it is more easy to separate the muscles from their attachments to the tuberosities from this point. The operation has five steps:

The first step.—The arm being slightly turned outwards and backwards, the point of a small amputating knife is to be plunged in on the outside of the coracoid process, and immediately under the summit of the head of the humerus; then the wrist is to be depressed, and an incision of ten or twelve centimetres in length is to be made in the longitudinal axis of the humerus, the point of the knife being always kept in contact with the bone.

The second step.—If the lips of the incision (which are formed from the thickness of the deltoid muscles) contract so as to prevent the exposure of the head of the bone, some of these muscular fibres are to be cut across in the *superior angle of the wound*, but the skin, which forms no impediment of this kind, is to be left uncut. If the lips of the incision do not contract in this way, nothing has to be done.

At the bottom of the incision, and opened by the knife, is the sheath of the long tendon of the biceps. The tendon is to be divided, but not displaced.

The third step.—By slightly rotating the arm inwardly and outwardly, the large and then the small tuberosities are to be brought to the centre of the incision, in order that the four muscles which are inserted into their summits may be divided.

The fourth step.—The capsule being extensively opened by the division of these four muscles, the elbow is to be carried backwards and then upwards, so as to make the head of the bone slip from its socket into the wound. Then

the periosteum is to be gently detached from the neck towards the shaft, and the head is to be removed by dividing the bare neck with the chain-saw.

The fifth step.—The vessels are to be tied, the cut surface of the bone is to be covered with the preserved periosteum as with a cowl, and the extremity of the humerus is to be kept in immediate contact with the glenoid cavity.

(D) CONCERNING THE INFERIOR EXTREMITY.

ART. 95.—*Removal of the head of the Femur and of the upper rim of the Acetabulum, with perfect recovery.* By Dr. LEWIS A. SAYRE, Surgeon to the Bellevue Hospital.

(*New York Journal of Medicine*, Jan. 1855.)

We give the case as Dr. Sayer relates it. The disease was *morbus coxarius*.

On the 20th of March, 1854, I was called, in consultation, with Dr. Throckmorton, to see Ellen G., 297, 5th Street, æt. 9, who had been suffering for eighteen months with *morbus coxarius* of the left hip, which was supposed to have resulted from a fall. She had been treated with issues, blisters, &c., together with the general tonic and anti-scorbutic remedies adapted to such cases; but the disease continued to progress, until an abscess was discovered, involving the whole upper front and inner portion of the thigh, accompanied with repeated chills, profuse sweats, and great prostration.

When I first saw her, this abscess had pointed in two places, and was apparently just ready to open; the point nearest the surface, and most fluctuating was just by the anterior superior spinous process of the ilium, immediately in contact with the attachment of the tensor vaginæ femoris muscle, and Poupart's ligament. The other place of pointing was about five inches below the ligament, just over the femoral artery; pressure on any part of the upper portion of the limb distended both of these pointing abscesses, showing communication between them.

The leg was shortened $2\frac{1}{2}$ inches, and turned inwards, but not permanently fixed in its position (as is usual), but allowing of considerable motion, which gave a distinct *bony crepitus* between the femur and ilium. The pelvis was twisted and drawn upwards. Her general health had become much affected, having lost her appetite, and she was suffering from hectic, with constant chills and profuse sweats, and was only rendered comfortable by the constant use of anodynes.

I advised a free opening of the abscess, and, if necessary, to remove the head of the femur. At first this was objected to; but, as the child's health rapidly failed and death seemed inevitable, the father, in a few days, consented to the operation. Accordingly, on the 29th of March, 1854, assisted by Drs. Throckmorton, Drake, Thebaud, Bauer, and Bertholf, I proceeded to perform it.

I first laid open the abscess by a free incision of about six inches, over the trochanter major, on the outer aspect of the thigh, and in a line with the femur, and then cut into the floor of the abscess (which principally occupied the inner and front portion of the thigh), and discharged about a pint of thin serous and flaky pus. The finger was then readily passed around the neck of the femur, and detected an opening in the capsular ligament on the inner surface of the neck. The upper border of the acetabulum had been absorbed, and the head of the femur was upon the dorsum of the ilium, near the anterior superior spinous process, surrounded by its capsule (which seemed to have been slipped up), and a large deposit of bone, apparently being an attempt of nature to make a new acetabulum. But this cavity thus formed had no lining membrane, as the femur grated roughly upon it. I then opened the capsular ligament on a line with the external incision, and disarticulated by bringing the leg strongly across the opposite thigh, and then, with a large pair of Luer's forceps, readily cut off the head of the femur at the lower extremity of the neck. The bone at this point appeared perfectly healthy. I was very cautious not to injure the insertion of the *psaos-magnus*, or *iliacus-internus*, or any of the *rotator muscles*, which are inserted just behind the trochanter major.

The upper rim of the acetabulum had been absorbed (according to the theory of Dr. March, of Albany), and the new deposit of bone, which was intended to supply its place, was denuded and carious. I gouged it off with a sharp, firm chisel, made for that purpose, and, in this way, took off a number of flakes of bone, until I came to a healthy, bleeding surface.

The anterior superior spinous process on its outer surface, and the external lip of the crest of the ilium, was black and carious for some distance, and with the forceps I easily clipped it off until I came to healthy bone. Very little blood was lost in the operation, and after cleaning away all the debris, I brought the leg in the straight position, filled the wound with lint, and dressed with a roller and cold water compress. She was then put to bed, and a cup of strong coffee administered, after which she soon fell asleep.

The child was under the influence of chloroform during the operation which occupied nearly twenty minutes, and was perfectly insensible the whole time.

The following extracts from my note book, taken at each daily visit, exhibit the progress of the case:

11 P.M.—Has slept occasionally, and is quite comfortable; pulse, 128; skin good; vomited freely about 4 P.M.

March 30th, 10 A.M.—Passed a good night, without any narcotic, and slept about four hours; has had no chill; taken breakfast with a relish, and is surprisingly comfortable, considering the magnitude of the operation; pulse 120; no hemorrhage; passed urine twice.

31st.—Took half a grain of opium last night; slept well; pulse, 120; skin good; removed external layer of lint; found small amount of pus.

April 1st.—Slight fever; heat of skin and thirst; pulse, 130. Administered 5 gr. Dover's powder, with addition of half a grain of ipecac., every four hours.

2d.—Has passed a good night, slept six hours, ate a good breakfast, and feels every way better, but is much more feeble; dressed the wound; on removing the lint, found healthy pus in abundance.

The abscess, which pointed at the anterior superior spinous process, being again full and fluctuating, I opened it, and gave exit to about a tablespoonful of tolerably healthy pus; pulse 140, and more feeble; directed to administer brandy and beef-tea more liberally; I do not think the family give sufficient stimulants or nourishment, as they are very strongly opposed to brandy, and are afraid of meat on account of fever.

3d.—Slept well all night without opiate; pulse, 120; bowels moved twice naturally; appetite good; finding great improvement follow a more nutritious diet: I advised its continuance.

4th.—Same as yesterday: healthy suppuration, rather abundant.

5th.—Child very comfortable, amusing herself by cutting paper dolls; applied the straight splint for counter extension to the well side, and made extension by means of the foot-board, bringing the limb down to the same length of the opposite one.

6th.—Slept well; bowels moved naturally; but pulse more quick and feeble, 160; has not eaten so well; ordered brandy and soup to be given more liberally.

7th.—Slept well, but much weaker, having had three loose discharges in the night, and some hemorrhage from the nose, which was arrested by astringents and compress. Ordered brandy and laudanum, with more liberal use of iron.

8th.—Diarrhœa not yet checked; the brandy and opium was not given, and yet the child is somewhat stronger than yesterday; pus more consistent.

9th.—Diarrhœa checked; slept well; eats freely; discharge less copious and more consistent; pulse 120.

10th.—Very comfortable; looks as if it will require a counter-opening on the front of the thigh, at the old place of pointing.

13th.—Doing well, and the wound filling with healthy granulations.

14th.—I applied a compress and adhesive straps on the inside of the thigh.

July 1st.—Dr. Throckmorton has seen the child daily since my last visit, and reapplied the bandage and compress, which has had a most salutary effect and the abscess has the appearance of healing rapidly.

10th.—I was again called to meet Dr. Throckmorton to-day, and found the

child much prostrated from a severe attack of dysentery, which had lasted four or five days; she is very much reduced, and, I fear, will not rally. The granulations are flabby, and pus thin and copious.

August 1st.—The dysentery has been checked for some days; but the wound, which was nearly closed, has opened, and a small piece of ragged bone came away, which was probably some portion of the shavings or chips removed from the ilium, at the time of the operation, and which I had not been sufficiently careful to remove.*

20th.—The child very much improved, but the fistulous opening, from which the piece of bone had escaped, remaining, and having rather a white and flabby appearance. I injected it with tinct. iodine.

24th.—The injection has been followed by a smart attack of erysipelas, which has extended down some distance below the knee, and there is considerable constitutional disturbance.

September 1st.—The erysipelas gradually subsided, but seems to have been of great service, as it has caused union of the walls of the abscess all around the thigh, and the small opening in the cicatrix is nearly closed, discharging a very few drops of healthy pus. The limb is still in the extending splint; but on removing it there seemed no tendency to retraction of the limb. The splint was reapplied; but the body was left free from the bandage, so as to allow of flexion, in order to prevent ankylosis.

I might here mention, that for some weeks past, since about the 1st of August, at each dressing her body has been brought at a right angle with the thighs, having this object in view; and I have now permitted her to do it as often as she likes.

November 1st.—I had not seen the case for two months, until to-day, when, to my astonishment, I found her walking on her crutches, which she has been able to do for two weeks. Her limb appears of the same length as the other, and she can flex and rotate it freely. I directed her to bear no weight upon it yet.

20th.—To-day, I placed her in the horizontal position, and measured her carefully, and find there is about one-eighth or nearly one-fourth of an inch shortening. By taking hold of the foot, the whole body can be drawn down in bed without pain in the joint, and a pressure may be made sufficiently strong to move the pelvis and body upward without producing any shortening of the limb. When she lies upon the back, with the leg extended upon the thigh, she can elevate the heel sixteen inches from the bed, and flex the knee so as to bring the thigh at a right angle with the pelvis; she can rotate it internally so as to touch the other foot, and externally so as to touch the bed. Her general health is perfect, and the case has terminated perfectly successfully.

The bone was carefully examined, microscopically, but no trace of tubercle was found.

Appended to this case Dr. Sayre gives an account of other cases of the kind, and the paper (which is one of much research) ends with a summary, which we are glad to subjoin:

SUMMARY.—*Whole number*, inclusive of above case, 30.

Recovered, 20.—Of these, 13 were completely successful; 3 died of an intercurrent disease, at periods varying from three months to two years after the operation; 1 is reported as not having progressed favorably; the remainder are too meagrely reported, or too recently performed to decide correctly as to the results.

Died, 10.—Of these, 4 died within one week after operation; 1 on the twelfth day; 2 in two months; 1 in four and a half months; 1 some months afterwards; 1 unsuccessful.

* Since making this note, my impressions have been more confirmed, as two similar pieces of bone have been removed from different parts of the cicatrix, and have thus materially retarded the progress of the case; I should therefore advise great care, after the performance of this operation, that all debris and foreign bodies be carefully washed from the wound; and in so large and ragged an abscess as this one was, it will require more care than any one would imagine, unless they had seen it.

Table of Twenty-nine Cases in which the operation of Excision of the Head of the Femur has been performed in Morbus Coarctatus.

No. and Sex.	Age.	Cause and Duration.	Condition.	Operation.	Progress of Case.	Operator.
1	—	. . . . .	Caries; head separated from shaft.	1816.	Recovered.	ESCHMÄZ.
2, M.	14	Fall three years before.	Head dislocated on dorsum; great exhaustion; several fistulae.	1818; straight incision; straight saw; four inches removed.	Bandages and splints used as in compound fracture; fever slight; discharge soon ceased; health rapidly improved; well in a year; perfect use of limb, except in rotating knee in.	WHITE.
3	—	. . . . .	Caries.	1823; removed above lesser trochanter.	Possession of acetabulum and formation of abscesses in the pelvis; died in three months.	HAWSON.
4	—	. . . . .	Caries with abscesses.	1829.	Cured in six weeks; patient able to walk.	SCHLITTING.
5	—	. . . . .	Caries; head loose; fistulae.	. . . . .	Died two months after operation.	KING.
6	Child.	. . . . .	Caries.	. . . . .	Recovered.	VOGEL.
7	—	. . . . .	Dislocation of neck of bone and trochanter; head healthy.	. . . . .	Sloughs formed on the sacrum; death on the fifty-third day; wound nearly healed.	TEITEL.
8	—	. . . . .	Caries; head dislocated.	. . . . .	Gangrene of wound took place and death followed on the fourth day.	"
9	—	. . . . .	. . . . .	1845; removed all above lesser trochanter.	Complete recovery.	"
10, M.	14	Some months.	Head dislocated on dorsum; large sinus extending to it.	1845; straight incision; chain saw broke; used the straight; four inches removed.	Dressed as in compound fracture; shock slight; wound healed well; health rapidly improved; limb very useful, 2½ inches shorter than the other.	FELIUSSEN.
11, M.	8	Some time.	Head dislocated; abscess over the ilium; sinuses; hectic and emaciation.	1847; crural incision; edges of acetabulum removed; left the trochanters.	Treated as in former case; health improved; wound never entirely healed; died two years after of disease of the liver.	"
12, M.	16	Long standing.	Dislocation; emaciation; cough; hectic; no abscess or fistulae.	1847; straight incision; removed head and part of neck.	Secondary hemorrhage; collection of pus between glutei muscles; death on seventh day; extensive disease of scyloid cavity.	ROUX.
13	Child.	Two years.	Head dislocated on acetabulum; sinuses and abscesses.	1848; removed head and portions of acetabulum.	Died four days after the operation.	SIMON.

14, F.	10	Some time.	Head carious and dislocated on dorsum.	1848; head and trochanter removed; acetabulum healthy.	Recovered.	FRASER.
15	—	—	—	—	Recovered perfectly.	FRASER.
16, M.	16	Two years.	Caries; severe pain; sinuses with discharge.	1848; straight incision; removed four inches and the carious part of cavity.	Dressed as in fracture; pain ceased; health rapidly improved; wound closed well.	WATSON.
17	—	—	—	—	Unsuccessful.	"
18, M.	23	Year and a half.	Hip swollen; sinus discharging, caries.	1848; straight incision; removed three inches of rim of acetabulum; no ligatures.	Water dressings; fever slight; symptoms improved for four months, when leg became oedematous, and he died 4 months after the operation; Bright's disease of kidneys and caries of vertebrae found.	SMITH.
19, F.	—	Three years.	Caries; head dislocated.	1849; cranial incision; removed head & trochanter major.	Recovered perfectly.	FRASER.
20	—	—	—	1849.	Recovered, with perfect motion of the thigh, & could walk a short distance. Placed in straight position; slight fever; symptoms soon improved; altered head and limb.	MORSE.
21, F.	12	—	Large open sore on hip; caries; sinuses; emaciation; discharging freely.	1849; straight incision; compound saw; removed 4½ inches of bone.	Wound healed; health improving.	CORRIG.
22, M.	41	Two years.	Great suffering; grating in joint; large discharge of matter.	1849; made a T incision; capsule entire except at lower edge; removed below great trochanter; head carious, edge of cavity.	Wound healed; health improving; symptoms all subsided; died three months after of dysentery, the wound being nearly healed; parts found in a healthy condition, and in an advanced stage of repair.	BURMAN.
23	—	—	—	1851; removed cavity.	Wound healed, but abscess formed; did not progress very favorably.	SAVIL.
24, F.	10	Several years.	Caries; head and neck partially destroyed. Feeble and emaciated; fistule discharging freely.	1852; circular incision; large collection of pus under gluteal muscles.	Symptoms rapidly improved; made extension by weight attached to foot; wound healed.	SWANLEY.
25, F.	10	Four years.	Head carious; emaciation and hectic.	1852; straight incision; removed one inch below trochanter; also edge of acetabulum.	Progressed favorably two days; died on the third day after operation; found large perforation of acetabulum.	HAWKINS.
26, M.	10	—	Caries and dislocation.	1852; bone separated while sawing.	Cold water dressings; pulse unaltered three days; death on twelfth day.	ROZLOV.
27, M.	14	—	Greatly reduced; bone dislocated.	1853; neck and great trochanter removed.	Rapid improvement; suppuration profuse; died some months after.	MAURICE.
28	13	Long standing.	—	1854; removed head and both trochanters.	Improvement marked.	FRASER.
29, M.	8	Long standing.	Great emaciation; hectic, caries.	1854; removed head and edges of acetabulum.	Recovered.	MAURICE.

ART. 96.—*Three cases of amputation at the Hip-joint.*

By Professor HEYFELDER, of Erlangen.

(Deutsche Klinik, March 1853; and Gaz. Méd. de Paris, Nov. 3, 1854.)

M. Heyfelder has performed this operation five times, and three of his patients are yet alive. He attributes his success to his having operated by the oval method of M. Scoutetten. The present cases, two of which are successful, are given with scarcely any details.

1. The first patient was a young man, *æt.* 22 years, who had an enormous cancerous tumor extending from the knee to the upper part of the thigh. The patient was very emaciated, but his digestion good. The operation was performed on the 17th March (no year), and on the 28th of May the patient left the hospital perfectly well.

2. The second patient was a man, *æt.* 41 years, for a fungoid tumor, implicating the whole of the upper parts of the thigh. Twenty-four hours afterwards, he was seized with nervous agitation, and a few hours later he died. No dates are given.

3. The third patient was a laboring man, *æt.* 28, suffering from osteosarcoma of the greater part of the thigh-bone, an affection which began in the knee. The operation was performed on the 14th July, and the results were perfectly successful.

ART. 97.—*Case of amputation at the Hip-joint.* By Dr. BEATSON.*(Indian Annals of Med. Science, Oct. 1854.)*

This operation was performed in the field hospital at Rangoon. It is related, not as possessing any feature of unusual interest, but simply as a fact for statistical purposes.

CASE.—Thomas Lisbey, Conductor in the Ordnance Department, *æt.* 61, 40 years resident in India, was wounded at the taking of the stockade at Donnabew, on the 19th March, 1853. While kneeling, a bullet struck him on the left hip, and on rising, a second entered the inner side of the left knee-joint, passing out a little lower down on the outer side. On the 21st March he was embarked on the *Phlegethon*, and sent to the field hospital at Rangoon, where he arrived on the evening of the 24th. He was much exhausted by severe pain and want of rest, his pulse jerking, but not much increased in number or reduced in strength; his skin cool; his tongue thickly coated with yellowish-brown fur, and moist. He was ordered an opiate, and examination deferred till the following morning.

March 25th.—Has passed a tolerable night, and feels refreshed and cheerful; his pulse is less irritable, and he is free from febrile heat; he says that his bowels have not been relieved for a week. One bullet has passed completely through the knee-joint, and the synovia runs out freely; the joint is not hot or swollen, but there is considerable tumefaction above and below it. The second bullet has entered about midway between the anterior superior spinous process of the ilium and the trochanter major, and is lying beneath the skin in the right groin. Its track can be felt across the abdomen, and there is ecchymosis at the root of the penis. A small incision being made, a large leaden bullet, much flattened, was extracted. Great agony is caused by any attempt at moving the hip, and examination is therefore prevented. The general appearances leading to the supposition that the ball had struck the femur, fracturing the cervix, and had passed superficially without effecting an entrance into the pelvis, it was determined to put the patient under the influence of chloroform, and to amputate either above the knee, or the hip-joint, as circumstances might require. To this he assented, requesting that all proceedings might be deferred till sunset.

At five P. M., he was placed moderately under the influence of chloroform, and examination proved that the neck of the femur was completely comminuted. The whole of the medical staff present, having concurred in the opinion

that amputation of the hip-joint presented the only chance, however remote, of safety to the patient, the operation was performed in the usual manner; the action of the chloroform being mildly kept up, and the femoral artery commanded by Assistant-Surgeon Paske; the knife was introduced at the wound, carried across the front of the joint, and the anterior flap formed, considerable difficulty being caused to the passage of the instrument by the displaced fragments of bone. A slight gush of blood escaped from the femoral artery, but the flap being grasped in the hand, a ligature was immediately thrown round the vessel.

The trochanter major and minor, and the several portions in which the neck was broken, were then dissected out; the fragments were very irregular, and as rough as pieces of sand-stone, the head of the femur gave great trouble, being broken off level with the acetabulum, and fractured obliquely through. The posterior flap was then formed; ligatures applied to the bleeding vessels, and the flaps brought together by sutures. A very moderate amount of blood was lost, but the shock of so severe an operation, added to the suffering which he had previously undergone, was too much for him; he partially rallied, but his pulse sank rapidly, and respiration became gasping; some wine and water was given and swallowed, cold water dashed in the face, and the chest rubbed with ammonia, but without effect; in a few moments the pulse became imperceptible, the breathing ceased, and he died.

Examination of the body after death proved that the ball had passed amongst the abdominal muscles without entering the pelvis. There was ecchymosis from effusion of blood between the bladder and its peritoneal covering; the bones of the pelvis were quite uninjured; the knee was traversed by the bullet; the articulating extremities of both tibia and femur being fractured.

Death was caused in this case clearly by the shock produced by the operation, added to the age and exhaustion of the patient. The chloroform was moderately given, and there was neither stertor nor alteration of pulse during its administration. The hemorrhage was very moderate.

ART. 98.—*Case of amputation at the Hip-joint.* By Mr. ERICHSEN, Surgeon to University College Hospital.

(*Dublin Medical Press*, Feb. 28, 1855.)

A railway laborer, about 29 years of age, was admitted at four o'clock, P. M., on Saturday, March 31st, with his right thigh crushed by the passage of the wheels of two loaded trucks over it, at about the junction of the upper and middle third of the limb. At this point the limb was completely disorganized, though the integuments appeared to be scarcely injured, there being merely two apertures—one on the outer side of the limb, about three inches below the trochanter; the other immediately opposite on the inner side. The deeper structures of the limb were seriously disorganized, and the fracture badly comminuted. There was very considerable extravasation of blood into the substance of the limb, and some oozing. Altogether the limb was much as if it had been traversed by grape or canister shot. No other injury could be detected, except a bruise on the left ankle. The patient was in a state of extreme depression, but collected in mind. He was put into bed, wrapped up in blankets, warm bottles were applied to his sides, and stimulants given. When Mr. Erichsen arrived, about five o'clock, reaction had in some degree set in; and the poor fellow, on being informed of the nature of his injury, not only gave his consent, but expressed a wish for the immediate removal of the limb. Whilst the necessary preparations were being made, Mr. Erichsen directed that one of the dressers should compress the femoral artery at the brim of the pelvis with his finger, so as to prevent any further loss of blood.

At half-past five Mr. Erichsen proceeded to operate, Mr. Marshall taking charge of the anterior flap and vessels, Mr. Statham of the limb. The limb was removed by the double flap operation. The anterior flap made by transfixion, was immediately raised, and firmly grasped; the joint was then opened, the head of the bone turned out, and the posterior flap cut downwards and somewhat for-

wards. The limb was removed in less than half a minute, the only circumstance that occasioned any difficulty being, that as the femur was broken off to within two inches of the neck, there was not enough length of bone left for Mr. Erichsen to grasp with readiness, in order to detach the bone from the acetabulum by the leverage of the shaft. There was but very little blood lost, the vessels in the anterior flap being securely grasped, as already mentioned, and the hemorrhage from the posterior part prevented by an assistant firmly pressing a dry sponge against it. Six ligatures were applied to the arteries in the posterior flap, and three were required in the anterior flap, these being tied last. The flaps, which came into excellent and accurate apposition, were next brought together by four points of suture and broad strips of plaster, and the whole supported by a kind of spica bandage.

Chloroform was administered during the operation, and, so far from depressing the patient, it caused the pulse to rise, and seemed evidently of service in lessening the influence of the shock in the nervous system.

On examining the limb after removal, the soft parts under the skin were found completely disorganized along the track of the wheels, the femur frightfully comminuted to within two inches of its neck, although the integuments were not externally torn, with the exception of the two apertures to which we have already referred.

The patient bore the operation wonderfully well, but soon afterwards became restless, depressed, and finally sank in the course of the evening, from the combined influence of shock, the injury, and exhaustion.

ART. 99.—*On Dislocation of the Femur upwards beneath the Crural Arch.* By Mr. CADGE, of Norwich.

(*Lancet*, Dec. 23, 1854.)

In a recent communication to the Royal Medico-Chirurgical Society, the author relates the particulars of the dissection of a dislocated hip, in which the femur was thrown upwards beneath the crural arch, where the head of the bone had become surrounded by a complete and perfect bony capsule, which was of such an extent as to hold it firmly *in situ*. The history of the case is given in full by Mr. B. Travers, jun., in a paper published in the twentieth volume of the Society's "Transactions," and the present communication therefore renders the whole case complete. This form of dislocation of the femur does not precisely correspond with any of the four described by Sir A. Cooper, and the author proposes substituting for the term "dislocation on the pubes," the more general term of "dislocation upwards and forwards," or dislocation beneath the crural arch. The author thinks that Sir A. Cooper's limit of eight weeks for the attempt to replace a dislocated femur is too restricted. Dupuytren succeeded in reducing a dislocated hip on the ninety-ninth day. The paper was accompanied by some drawings, and by the preparation, which is of great value and interest.

ART. 100.—*On internal derangement of the Knee-joint.* By Mr. STEELE.

(*Assoc. Med. Journal*, March 9, 1855.)

Internal derangement of the knee-joint is the appellation given to an injury, the precise nature of which, as may be inferred from its vague title, is not very clearly understood. The accident, however, is not very uncommon, nor is it unimportant in its consequences; for, if overlooked, it may prove very embarrassing to the surgeon, and may lay the foundation of more serious disease. The elder William Hey has the credit of having first called attention to this injury. It is noticed by Sir A. Cooper, in his work upon the joints, and by other surgical writers; but the subject appears scarcely to have received the attention which its importance deserves.

"I have no recollection," writes Mr. Steele, "of seeing a case or hearing one mentioned during my attendance on hospital practice in London and elsewhere, and it was only recently that my attention was particularly drawn to it by a clinical lecture of Mr. Smith, of Leeds, which appeared in the '*Lancet*' of the

20th September, 1851. A short time after perusing that lecture, I met with a case which I at once recognized from his description. I was also then able to explain satisfactorily to my own mind cases which had come under my notice previously, and which had puzzled me a great deal. The accident is generally produced by some slight fall, slip, or sprain. Sir A. Cooper observed that it occurred most frequently when a person in walking strikes his toe, the foot being at the same time everted, against any projecting body, as the fold of a carpet; he also relates cases in which the accident happened from a person having suddenly turned in his bed, when the clothes not suffering the foot to turn with the body, the thigh-bone has slipped from its semilunar cartilage. The symptoms, when the accident is recent, are very characteristic and readily recognized, when attention has once been drawn to these cases: but yet so slight, as very likely to be overlooked or misunderstood by those who are not aware of their occurrence. There is little or no alteration in the appearance of the joint; no swelling or effusion; and no pain when the limb is at rest. The patient walks with a limp, with or without pain, and cannot bring the heel to the ground from inability to accomplish full extension of the limb; the motions of the joint are unimpaired, except that extension, either by the patient's efforts, or those of the surgeon, can only be partially effected, so that the limb remains constantly a little bent. In some instances, the cure takes place suddenly and accidentally; in others, the mischief will continue for days, weeks, or months. Some patients are liable to a recurrence of the accident, as is recorded by Sir A. Cooper, and as I have observed in one instance in my own practice. When accompanied by other severe injury or disease of the knee-joint, as may happen either from the violence producing the accident, or from rheumatic or scrofulous inflammation consequent upon it, the case assumes a more serious and complicated character, is less readily detected and less easily remedied.

"The exact condition of the internal structures of the joint, which is subjected to this derangement, is not accurately known. Mr. Hey says, 'an unequal tension of the lateral or cross ligaments of the joint, or some slight derangement of the semilunar cartilages, may possibly be sufficient to bring on this complaint.' Sir A. Cooper regards it as a 'partial luxation of the thigh bone from the semilunar cartilages.' Mr. Smith, of Leeds, thinks that 'the edge of the semilunar cartilage is turned upwards.'

"The treatment to be adopted in recent uncomplicated cases of this injury is exceedingly simple and usually very satisfactory in its results. It is clearly and graphically described by Mr. Smith, in the lecture before alluded to; and I cannot do better than give it in his own words: 'If the right knee be the one affected, I place the patient at length on a sofa on his left side, I then take hold of the right ankle with my right hand, and by slow and gentle means gradually flex the limb till the heel presses upon the buttock; now is the time that a little cunning and art is required to perform the full extension, for if you attempt this without manœuvring properly you are foiled, the muscles resist the action, and you can only succeed by cheating them. I now take care the patient does not see what I am about. I place the left hand above the knee, grasping the vasti muscles, hold the ankle above the heel with the right hand, make several gentle extensions, but no further than to a right angle; and when my patient seems fully impressed with the belief that I am going to proceed no further, when I am satisfied I have caught him off his guard, I suddenly and powerfully perform the full extension of the limb. Generally I succeed; sometimes I fail, and have to repeat it once or twice. When the full extension is accomplished, the cure is usually complete.'

"Where this plan fails, and especially in cases of long standing, Mr. S. Hey recommends 'flexing the leg fully, placing the arm under the popliteal space as a fulcrum, to separate as far as may be the head of the tibia from the condyles of the femur, and at the same time to produce rotation of the tibia.' I will now relate some instances of this affection, which have fallen under my own notice.

"CASE 1.—The first case which I recognized was that of a young female, who stated that she sprained her knee six days before, by a trip, while going up stairs; she had consulted a surgeon, who ordered her an embrocation, but she

was still unable to walk without great difficulty. There was no pain or swelling of the joint; but the patient was unable to place the heel flat upon the ground, or fully to extend the limb. I adopted the manipulation described by Mr. Smith, and the limb was at once restored to its natural condition, except some weakness, which remained for two or three days, after which she had no return of the complaint.

"CASE 2.—The next case was that of a mechanic who fell down a steep bank while carrying a rocking-horse; he had contusions on various parts of his body, and suffered severely from the general concussion of the fall, and was confined to his bed for some days; on attempting to walk, he found he was unable to put his foot flat to the ground; and on examination, I was satisfied that the knee was in the condition peculiar to these cases; there was also in this case acute pain when firm pressure was made on the inner side of the joint. Manipulation, as in the former case, enabled the patient at once to place his foot firmly to the ground, and in a few days he walked as usual.

"CASE 3.—The next case I shall relate was of a more complicated nature. An iron-moulder, æt. about 40, of intemperate habits, and very liable to rheumatic inflammation, fell down and sprained his ankle, which became hot, painful, and much swelled; but these symptoms subsided in a few days, and his knee became similarly affected, and he then applied to me for advice. The knee-joint was leeches and blistered repeatedly, and the treatment appropriate for rheumatic synovitis carried out, under which the case slowly improved; and the joint was, with the exception of some thickening of the synovial membrane, restored to its usual state, except that the patient was unable to extend the limb completely; flexion and extension gave no pain, but he was unable to walk across the room, from inability to put the foot to the ground. After carefully examining the limb, I became satisfied that the peculiar derangement of the joint we are speaking of had occurred probably at the time of the accident; but my attention being drawn to the more evident acute affection, and as a semi-flexion, was the position I wished to preserve, as most conducive to the relief of the pain and inflammation of the joint, it had escaped my notice. I adopted forcible extension in the same way as in the other cases, and the patient at once jumped out of bed and walked across the room. It was some time before the whole of the thickening about the joint was got rid of; but there was no more difficulty in placing the foot to the ground, or of fully extending the limb."

Mr. Steele also refers to two cases in which he had every reason to believe that the same kind of mischief existed without being detected, one of which was set right by the rough practice of a "bone-setter," after foiling his own efforts to relieve it. He then adds, "a similar derangement of parts may occur in other complicated joints, as the shoulder or hip, and these eluding the ordinary examination of a medical man, are unconsciously remedied by the rude handling and rough manipulations of these ignorant pretenders. A small balance of good to place against the incalculable amount of mischief, which these unscrupulous gentlemen inflict upon the limbs and lives of those who intrust themselves to their care."

ART. 101.—*Dislocation of the Astragalus backwards and inwards.*

By Dr. WILLIAMS.

(*Dublin Medical Press*, April 4, 1855.)

The notes of this case are taken by Mr. Alfred H. Taylor, resident pupil at the City of Dublin Hospital, at the time of the patient's admission.

Stephen Philips, laborer, æt. 54, of spare habit and sallow complexion, but who has uniformly enjoyed good health, and lived well and temperately, was admitted into the City of Dublin Hospital on the 12th of April, 1852.

He states, that on the previous day he had been at work, along with some other men, beneath an overhanging bank of earth and gravel in the granite quarry at Kingstown, which they were undermining and removing in order to expose the granite strata underneath. At the time the accident occurred, the patient and another man were engaged shovelling the loose earth, as it was

detached, into a truck or wagon, which was placed behind them on the "tramway." Whilst thus employed, another man ascended the bank, and, without any warning to those below, struck a heavy iron bar, called a "clay-bar," into its upper surface, when it suddenly gave way, and, being precipitated over struck the patient violently on the left side of the thorax (he was on the side of the wagon next the falling earth), he standing with his chest parallel with the front of the bank previous to its fall; but, when struck, his body was partially rotated backwards and to the right side, as he was in the act of throwing a shovelful of earth into the wagon, which stood behind and to the right side of him. The force of the concussion threw him violently backwards across the roadway. The remainder of the earth fell over the lower part of his body, fixing his feet and legs to the ground. Though very much hurt, he says he was not at all confused, and describes the accident as having taken place exactly as above stated. He also says, that he does not think the mere weight of the falling earth was sufficient to produce the injuries received, as he was easily able to withdraw the injured limb without assistance; the right leg having been more heavily covered, had to be dug out before he could be completely extricated. He says he suffered acute pain in the left ankle, from the moment of the accident, and it soon became swollen, and he also had severe pain in the left side of the chest. He was carried to a house in the neighborhood, and the next day was admitted to the City of Dublin Hospital, under the care of Dr. Williams.

He complained of pain and a stitch on taking a full inspiration in the left side of the chest, and, on examination, the fifth and sixth ribs of the left side were found to be fractured about their centres. The left ankle-joint presents some curious and unusual appearances. The anterior relations of the tibia are very little disturbed, the anterior aspect of the foot being free from deformity, except, indeed, a nearly imperceptible shortening of the foot, which is a little everted. He has free motion of his toes, and some slight motion of the ankle-joint. Motion of the latter increases the pain, which is of a "burning" character. There is no fracture of either the tibia or the fibula, and there is some swelling and ecchymosis, with a hard tumor of an irregularly convex shape, lying between the inferior extremity of the tibia, the tendo-Achilles, and os calcis. Professor Williams came to the conclusion that this tumor was formed by the astragalus, which was dislocated backwards and inwards, and also so rotated on its antero-posterior axis that its superior articulating surface looked almost directly inwards. A slight attempt was made to replace the bone, but was speedily abandoned, both because of the impediment to reduction presented by the above-mentioned rotation, and of the risk of further injury to the swollen and ecchymosed soft parts covering the astragalus. The limb was then placed on a double inclined plane, so arranged that the leg lay horizontally. Leeches were applied to the joint, and subsequently cold water irrigation.

The soft parts covering the displaced bone inflamed; and on the eighth day, when it was evident that their destruction was inevitable, they were divided by a crucial incision, which gave exit to a little sanious discharge, and exposed the bone with its superior articular surface looking inwards. On the fourteenth day the bone was removed (some strong ligamentous attachments, which still held it, being divided with a probe-pointed bistoury guided by the fore-finger), and it was then found that the astragalus had been fractured as well as dislocated, its head and a portion of the interior surface having been broken, or rather ground off, and a quantity of the resulting small fragments were removed. The limb was then replaced in its previous position. Nothing requiring to be particularly noticed occurred until a fortnight after the removal of the bone, when an abscess formed below and behind the external malleolus, and was opened. The discharge both from this abscess and from the cavity from which the astragalus had been removed, now rapidly diminished, and the parts presented a very healthy appearance. Matters went on favorably till about the 6th of May, when some trouble was occasioned by stripping of the integuments over the sacrum and os calcis, in spite of every precaution that had been taken to guard against both. This, however, was remedied by attention to position, and on the 7th of June the limb was replaced in its original posture. From this time he went on steadily, but very slowly improving; and on the 10th of August the cavity

whence the bone had been removed had cicatrized, leaving a deep depression.

The foot was in an exceedingly slight degree extended, but not permanently so, for he possessed some power of moving the ankle, and was able to bring the foot to a right angle with the leg. He now began to move about on crutches, and at first the foot, when allowed to depend for some time, became painful and cedematous, but that inconvenience was relieved by equal bandaging, and soon ceased. Towards the latter end of August, he left the hospital to go to the country, and was then able to walk pretty well with the aid of a stick.

Nothing was seen or heard of the patient until ten months after he had left the hospital, when he returned and stated that he had resumed work, though not of so laborious a kind as before, but that the extension of the foot had gradually increased, so as to cause considerable inconvenience in walking. The tendo-Achilles was now divided subcutaneously, and the foot was brought to about the same position it had been in when he first left the hospital. He was then provided with a high-heeled shoe, and left the hospital considerably improved, but using the help of a stick in walking.

PART III.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 102.—*Premature Labor induced by the "Water-douche."* By Dr. HARDY.

(*Dublin Quarterly Journal of Medicine*, Feb. 1855.)

THIS plan, which was first practised by M. Kiwisch, of Wurzburg, was first tried in this country by Dr. Tyler Smith (*v. "Abstract,"* XVI. p. 367). This was in Sept. 1852. In the same month, and only a few days later, it was tried by Dr. Shekelton, in Dublin, and the trial was repeated by the same gentleman in the following January. About this time, also, Dr. Lacey reports a case of the kind in the "*Lancet*." In Sept. 1854, Dr. Sinclair, of Dublin, reports another case, and, last of all, we have Dr. Hardy's case. The Dublin cases are all brought before the Dublin Obstetrical Society, and are related in the *Dublin Quarterly* for the time. We take the most recent case (Dr. Hardy's) as an illustration of the rest.

CASE.—A lady, æt. 27, whose first accouchement was tedious and severe, complicated with convulsions, and terminated by the crotchet, was placed under Dr. Hardy's care for her second confinement. In June, 1853, her second labor took place; this was of thirty-two hours' duration, and attended with alarming symptoms, which called for immediate interference; it was terminated, as her first, by perforator and crotchet.

On the approach of her third confinement, Dr. Hardy was again engaged to attend her.

"From particular inquiry I learned the time, which she seemed to know with great accuracy, when the seventh month would terminate; accordingly, on the 30th of December last, which was ten days later than the end of the seventh month, I directed a stream of tepid water against the os uteri, and confined the water by means of my right hand, which directed the pipe of the instrument, until I had fully distended the vagina; this was continued for about five minutes, the water being allowed occasionally to flow out of the vagina. The operation was twice repeated on this day; after the third time pains were felt in the back, like the setting in of labor; but they subsided as the patient went to bed, and slept well. Next morning the douche was repeated, when the os uteri felt more open than on the previous day; it was soft and dilatable; the head was felt through the anterior portion of the uterine wall, pressing on the cervix, and the fetal heart was heard beating strongly. After the fifth douche, which was given at about three o'clock in the afternoon, I was able to feel a portion of membrane protruding through the os.

"On visiting the patient again, at nine o'clock, P.M., I was informed that shortly after the douche she had a rigor, and there was some sanious discharge, which merely stained a napkin.

"As the os did not feel more open than when last examined, and there was no pain, I gave the sixth douche, the only one that gave rise to real uneasiness, and this only during the time the vagina was fully distended.

"I was sent for between one and two o'clock, A.M., and on reaching the patient at ten minutes past two o'clock I found the os uteri fully dilated (the labor, which was exceedingly easy, having set in at a little after twelve o'clock), and the membranes protruding to nearly the os externum; but instead of touching the head, which had been distinctly felt before, I now discovered an ex-

tremity floating in the liquor amnii. In about five minutes the membranes ruptured with a pain, and the presentation was found to be the feet. The contracted state of the pelvis now became very evident as the body of the child advanced; great difficulty was experienced in getting down the arms, and the head, which came with the face towards the left side of the pelvis, required very considerable force to make it pass the contracted brim; when this was accomplished, all difficulty was over, and delivery was completed with the utmost facility.

"Contrary to my expectation, the child's heart had not ceased to pulsate; I therefore resorted to the usual means for resuscitation, and so far succeeded that several attempts were made to cry; but there had evidently been too much injury inflicted in its passage through the narrow brim, so it gradually became more feeble, and died in little more than an hour after its birth. It is only necessary to compare the present with the two former labors of this patient, to be convinced of the utility of induction in her case; the first was upwards of sixty hours' duration, the second thirty-two, and the last not quite two, and during these two hours very easy, till the shoulders and head were passing."

"In resorting to the douche for inducing labor in the case now detailed," Dr. Hardy continues, "I constructed a very simple instrument, on Dr. Kiwisch's plan, consisting of a large garden watering-pot, to which a tube of an inch in diameter at its under part was attached; from this tube an India-rubber one, of nearly the same diameter, was fastened, and to it a stop-cock, which had a gum-elastic tube for passing up to the os uteri. From a vessel so large, and suspended at about ten feet from the ground, I expected to have obtained very considerable force, but a trial of it convinced me that it was deficient, as the stream of water was quite too feeble to distend the vagina; nor did it come against the os uteri with what I considered sufficient impetus to hasten dilatation; consequently, I laid it aside, and adopted Dr. Sinclair's syphon, which answered the purpose to my entire satisfaction, both in forcing a strong continuous stream against the os, and in distending the vagina to its fullest extent. There was only one thing in the instrument that I found might be made more convenient, and that was the conveyance pipe, which, being fixed to the instrument firmly, was occasionally pulled, to the inconvenience of the operator, by the person who pressed the elastic cylinders. To remedy this, I attached an India-rubber tube, which rendered the action of the instrument perfectly convenient, so that the tube in the vagina could be held without interruption against the os in whatever direction was found most likely to cause dilatation.

"It has been remarked that, after the third douche was given, pains came on like the setting in of labor, but subsided on the patient going to sleep, and did not return until the next day. I am of opinion, that if the douche had been again applied within a few hours after the setting in of these pains, in all probability four applications would have been sufficient; however, as a good night's rest was of importance, and all went on favorably both during the very short labor that followed, as well as during the convalescence up to the present period (this is the sixth day, and the patient has not had an unfavorable symptom; her pulse never was above the natural standard, and the uterine tumor subsided as rapidly as in an ordinary labor), there is nothing to be regretted in having to give six instead of four douches."

ART. 103.—*Twins born at an interval of forty days.* By —.

(*Gaz. des Hôpitaux*, Dec. 5, 1854.)

We give this case simply as it is related. No authority is given.

A healthy primiparous woman, *æt.* 24, who had always menstruated regularly, gave birth, after a short and natural labor, to a completely developed, but rather puny child, which died of catarrh when it was eight days old. The placenta came away naturally, an hour after the birth of the child. Some hours afterwards she attended to household duties. The abdomen was only partially diminished in size; active fetal movements were felt by the patient; and there was no lochial discharge, no lacteal secretion, and no milk fever.

Nothing particular occurred until the fortieth day after the birth of the child,

when another infant was born, which, though feeble like the first, had evidently reached the full period of its development. The lochial discharge and secretion of milk then became established.

ART. 104.—*On the state of the fetal pulse as an indication for artificial delivery.*

By Professor SIMPSON.

(*Edinburgh Monthly Journal*, April, 1855.)

At a recent meeting of the Edinburgh Obstetrical Society, Dr. Simpson made some remarks on the indications afforded by the stethoscope for expediting delivery, and especially directed attention to the fact, that while danger was usually indicated to the mother during labor, by the increased rapidity of her pulse, the death of the child was most frequently threatened when its pulse became slower and slower. It is known that in cases where, during labor, pressure was exercised upon the cord, the pulsations of the fetal heart become feebler, and are at length suspended by the continuous pressure. This is most probably the way in which the fœtus perishes, during severe and prolonged labors; the aëration of the blood by the placenta being imperfect, or entirely suspended. There are, however, cases in which danger is indicated to the child, by the fetal pulse becoming much more rapid than ordinary, reaching 150 or 160 beats in the minute, and at the same time very irregular. Dr. S. believes the danger in these cases does not result from pressure on the umbilical cord, as in the cases where the pulsations became slower and slower, but from pressure or some source of irritation acting on the brain.

ART. 105.—*Case of Birth after the death of the Mother.* By Mr. CHEEVERS.

(*Indian Annals of Medical Science*, Oct. 1854.)

In our last volume (XX.) we recorded an extremely interesting case of this kind by Dr. Mayer, of Wurzburg. This case, we then thought, was unique, but we have since found an *allusion* to a similar case in an admirable article on Medical Jurisprudence in the Bengal Presidency, by Dr. Cheevers,—an article to which we shall have occasion to recur on a future occasion. We are not disposed to accept Dr. Cheevers' explanation that the contents of the uterus were expelled by the accumulation of gas in the intestines, but we give the fact as he *alludes* to it.

"On a recent occasion," he says, "I saw the body of a female in which the work of decomposition had fully revealed the history of her death. After it had been placed in the dead-house, accumulation of gas in the intestines had caused the contents of the uterus to be expelled,—there lay a much decomposed fœtus of about four months, and with it a portion of the intensely acrid root of the *Plumbago Rosea*, seven inches and a half in length, thickly coated with inflammatory mucous-deposit."

ART. 106.—*Cases of Cesarean Section.* By (1) M. BEHM. (2) M. RETZIUS. (3) M. BROERS. (4) Dr. MERINAR. (5) Dr. MASON. (6) M. PIACHAUD. (7) M. LEBLEU. (8) M. WINKEL. (9) M. LA ROCHE. (10) M. DUBOIS.

1. (*Schmidt's Jahrbucher*, No. 10, 1855.)

2. (*Ibid.*)

3. (*Nederlandsch Lancet*; and *Medical Times and Gazette*, Oct. 21, 1854.)

4. (*Philadelphia Examiner*, Oct. 1854.)

5. (*Ibid.*)

6. (*Archiv. Gén. de Méd.*, Jan. 1855.)

7. (*Gaz. Des Hôp.*; and *Medical Times and Gazette*, Oct. 28, 1854.)

8. (*Gaz. Hebdom. de Méd.*, March 2, 1855.)

9. (*Schmidt's Jahrb.*, No. 3, 1855.)

10. (*Gaz. Hebdom. de Méd.*, April 20, 1855.)

These cases are nearly all of very recent occurrence. In three of them it is the second operation in the same woman which is recorded. Of the ten cases, eight children (twins in one case) were saved, and eight mothers lost.

1. *M. Behm's Case.*—The operation was necessitated in this case by a large bony tumor in the pelvis. The patient, æt. 29, was deformed and rickety. She had been delivered by craniotomy six years before, the tumor then being comparatively small. The present operation was performed on the 4th of September, 1851, under the influence of chloroform, and two living children were removed. At the time there was considerable hemorrhage, and three days afterwards the patient sank from exhaustion. Both the children survived.

2. *M. Retzius' Case.*—Here, a fibrous tumor of the pelvis was the cause of the operation. The patient had been delivered once before, and by the natural passages, but with extreme difficulty. The operation was performed under the influence of chloroform. The child was in an incipient state of decomposition. Little blood was lost, and the patient was not at all sensible to suffering during the operation, but she presently began to sink, and death happened forty-six hours afterwards.

3. *M. Broers' Case.*—This woman was 33 years old, and primiparous, when Dr. Broers was called on by Herr Nuijens to assist him in her delivery, as he had already in vain attempted extraction with the forceps. Dr. Broers found the head impacted very high up, the conjugate diameter being there narrow, and assented to the performance of perforation, as the pulsation of the fetal heart was no longer audible, and the attempt to return the head had failed. After a great quantity of brain had been discharged, it was found necessary to remove several pieces of bone before the head could pass through the conjugate diameter. After the birth of the child, which was well developed, a very violent hemorrhage set in, necessitating the removal of the placenta. On the introduction of the hand, it was ascertained that the conjugate diameter did not amount to quite three inches, that the promontory of the sacrum projected strongly forward, and that the pelvis was larger on the right than on the left side, but that it was in general too narrow. Convalescence proceeded favorably, and the patient was able in three weeks to go out. After the lapse of more than a year, the woman came to report that she was again about seven months pregnant. It was determined to induce labor in the thirty-second week, after Riecke's method—viz.: by introducing and leaving a bougie between the membrane and the wall of the uterus. On the third day, the os began slowly to dilate, and a second abdominal position was recognized. Turning was successfully performed, but with extreme difficulty, in particular the elimination of the head was almost impossible. The child, a female, was still-born; it was pretty well developed; 15½ inches long; weighed six pounds: the short diameter of the head, 3½ inches; the long diameter, 4½; the perpendicular measurement, 3½. Convalescence proceeded regularly; the patient was well in three weeks. Pregnant for the third time, she did not apply for assistance until the last. It was determined, in consultation with HH. de Bordes and Hoogwinkel, to perform the Cæsarean operation, although the existence of pulsation in the fetal heart was doubtful. The child had moved a few moments before, and the mother's state was favorable. The waters had already been discharged when the operation was commenced; the opening into the abdominal parietes (linea alba) and the peritoneum was six inches long; that into the wall of the uterus and the membrane was five inches; the incision fell close to the insertion of the placenta. The child, a female, well developed, 8 lbs. weight, above 17 inches long, was dead; the after-birth was removed through the wound. The latter, united by suture, healed so rapidly, that in fourteen days the woman might be looked on as recovered. Two years subsequently she again returned, in the ninth month of pregnancy. The necessity of performing the Cæsarean section was again agreed on, and the operation was on this occasion performed by Herr Hoogwinkel, in the same manner as before. At the beginning of the operation the membranes were still unbroken, the os was dilated to the size of a guilder: the head again presented. The incision, close to the cicatrix of the former, fell also on this occasion contiguous to the placenta; the membrane gave way during the operation. A well-developed living male child, 16 inches long, and weighing 7½ lbs. was extracted, as well as the after-birth, through the incision. The uterus contracted slowly and imperfectly; fever, with delirium, soon set in; the patient's strength diminished; there was no secretion of milk: the wound continued pale, without reaction. On the fifth day after

the operation, the woman died, aged 37. The child lived, and four years subsequently was in good health.

4. *Dr. Merinar's Case.*—This is a case in which the Cæsarean section was successfully performed twice. The child was dead in the first instance; the mother and child both survived in the second instance. The patient, æt. 24, was taken in labor on the 14th of July, 1852. For three days she was attended by a midwife; the labor had been active, and the waters had escaped on the second day. On the arrival of Dr. Merinar, he found great deformity of the pelvis—its antero-posterior diameter not exceeding two inches. On the morning of the 18th, uterine contraction ceased, the patient lay exhausted and stupid, skin hot and dry, great tenderness over the abdomen, much thirst, and pulse 124. After consultation, Cæsarean section was decided upon. An incision, 5½ inches in length, was made. The uterus was then laid open, and a dead male child extracted. The placenta and membranes were then removed; the usual dressings were applied. In the course of recovery no very severe symptoms manifested themselves; and on the 20th of September, she had entirely recovered. On the 22d of May, 1854, she was again taken in labor; the pains were violent, and, at midnight of the same day, were so severe, notwithstanding the free use of opiates, as to threaten danger. Cæsarean section was again decided upon. An incision was made parallel with the first. The womb was laid open, and a living male child removed. Following the delivery of the placenta and membranes, there was but little hemorrhage. The usual dressings were then applied. On the fourth day after the operation, somewhat severe symptoms set in, which, however, were controlled by energetic treatment; after this, her recovery was gradual. On the 28th of August, both mother and child were enjoying good health.

5. *Dr. Mason's Case.*—Here, rupture of the uterus was the cause of the operation being performed. The patient was in labor with her sixth child. Rupture of the uterus occurred two hours and a half after her sickness commenced, and when in the act of defecating, immediately on the occurrence of which she complained of intense, agonizing, burning pain in the right side. The head of the child receded, and could be felt through the abdominal parietes. Twelve hours after the occurrence of the rupture, Dr. Neil performed gastrotomy, under the influence of ether, by an incision through the linea alba, six inches in length. The child, which was hydrocephalic, was removed, together with the placenta and large quantities of coagula. The usual sutures and dressings were applied. Considerable constitutional disturbance occurred during the first ten days; but, on the twenty-first day, she was about house, and one month afterwards she had entirely recovered. The date of the operation was July 24th, 1854.

6. *M. Piachaud's Case.*—Madame B—, æt. 27, rickety and diminutive, and was taken in labor of her first child on the 1st of July, 1854. The sacro-pubic diameter of the pelvis was almost nil. The operation was performed as soon as the necessary preparations could be made and a living child was extracted. The mother sank fifty hours afterwards. On examination, the abdomen presented no marks of inflammation.

7. *M. Lebleu's Case.*—Charlotte Desmit, dressmaker, æt. 17, who had commenced menstruating a year ago, entered the Dunkirk Hospital, October 10th, 1844, at 7 P. M., pale and delicate. She exhibited traces of rachitic disease, which had affected her from youth, being only three feet and a half high. From the symphysis pubis to the soles of the feet she measured only a foot and a half, the tibia being strongly curved forwards, and the femur outwards. She was at her full term, and in labor since 3 A. M. The os uteri was dilated a little more than an inch; the membranes were entire. The sacro-pubic diameter was supposed to be rather less than two inches, both by my colleagues and by myself, who had determined on performing the Cæsarean operation several months previously.

The incision was made in the linea alba; the different structures were divided; the uterus was opened; first the fetus and then the placenta extracted. The hernia of the intestines was speedily reduced, and the wound was united by sutures and plaster.

On the following day there ensued violent sickness and vomiting, which was

allayed by venesection and the application of leeches to the abdomen. She had no further bad symptoms, and the wound cicatrized within a month. The child, well formed and muscular, was seen, a year after birth, in good health. Ten years afterwards, this same patient, who had consulted Dr. Lebleu from time to time for trivial ailments unconnected with the Cæsarean section, made her appearance with the announcement that she was three months *enceinte*, and earnestly desired that abortion should be effected—a proceeding which she had been given to understand was common in Paris, whither she threatened to go in the event of Dr. Lebleu's refusal. The worthy Doctor stated that he was quite aware of the nature of all such proceedings, but that neither he nor any one in the world had the right to take the life of a fœtus in utero, which was as much deserving care as herself, and that she must submit to a second Cæsarean section.

She left the consulting-room not convinced, but six weeks afterwards she returned with her mother, decided to abide by the decision, provided she could have the same nurse as upon the former occasion.

The second operation was much less painful and more quickly done than the former. The peritoneum adherent to the abdominal walls had become much thinned; but no accident occurred to retard the proceeding. The day following, she was calm and free from pain; but on the succeeding day, hemorrhage came on, and she expired.

Upon examination after death, the uterus was discovered the size of an ostrich's egg, and full of clots of blood, and in the middle of the cut edges were seen the orifices of two large varicose veins, each covered by a black clot, placed in a situation corresponding with the placenta.

8. *M. Winkel's Case*.—In this case, also, the operation was necessitated by rupture of the uterus. It was the second time the patient had been thus operated upon for the same cause, she having been delivered of a child by the knife in October, 1852. This child is still alive.

The patient's name was Augustine Lieper. She was much deformed, and the pelvic passage was almost obliterated. Labor began on the 25th of August, and after continuing for three hours, the uterus suddenly ruptured, and the child escaped into the cavity of the abdomen. The operation was performed under chloroform, and a dead child extracted. The mother recovered without any accident.

9. *M. La Roche's Case*.—This case unfortunately ended in the death of the mother. The mother's age was 27. She was a fine woman, but her pelvis was almost entirely filled up with a fibrous tumor. The operation was performed in the usual way, under chloroform; and the child, a fine boy, was born living. For two days the mother went on well, but on the third, symptoms of inflammation in the womb made their appearance, and she died on the fifth day.

M. Dubois' Cases.—Two cases of Cæsarean section have occurred in the Hôpital de Clinique, under Professor Dubois, both in the month of January last.

1st *Case*.—Here the operation was required in consequence of rachitic distortion of the pelvis. The patient was in a very unfavorable state, suffering from great œdema of the extremities, and from albuminuria. She was admitted into the hospital on the 25th of January, 1855. The membranes broke on the day following, shortly after which the operation was performed, and a living female child delivered. The lips of the external wound were kept together by strong "*serres-fines*" instead of sutures, and some of these slipped in the night, and a loop of intestine escaped through the gaping wound. This loop was greatly distended with gas; and it was necessary to prick it in various places, in order to effect its reduction. After this, twisted sutures were applied. The first night passed very well, and there was some little sleep; but towards noon the next day, she began to cough and vomit, and presently she sank. The post-mortem examination furnished no sign either of hemorrhage or of inflammation. The pregnancy was the first.

2d *Case*.—This patient was admitted into the same hospital, preparatory to her first confinement, on the 25th of November, 1854. Her pelvis had been fractured when a child, and considerable displacement of the bone existed. She had been sent up from the country, on the supposition that her delivery

might be more than ordinarily difficult from this cause. Labor began on the 7th of January. On examination, the pelvic passage was found to be very contracted, and its upper part occupied by a strong fibrous band, beyond which, with extreme difficulty, the os uteri could be felt. This band was divided with a scalpel, but the passage was still too contracted to allow of a proper examination, and natural birth was out of the question. Under these circumstances, M. Dubois resolved to try to deliver by craniotomy, and he introduced the instrument with considerable difficulty; upon doing which, a considerable quantity of extremely fetid gas escaped into the chamber. The difficulty he had in introducing the instrument caused the operator to abandon the idea of delivery in this way, and the Cæsarean section was resolved upon, the failing strength of the mother rendering all further delay (she had been in labor four days) impracticable. She was, therefore, put under the influence of chloroform, and the operation performed in the usual way. The fœtus was quite putrid, and enormously distended with gas. There was scarcely any hemorrhage. In the evening the patient became agitated, and this agitation increased during the night; and on the next day she sank, prostrated, apparently, by putrid infection, for the strong putrid odor which had been attributed to the fœtus continued after its extraction. On examination after death, the inner surface of the uterus was found to be in a gangrenous state.

ART. 107.—*Inversion of the Uterus following Parturition.*

By Mr. BORHAM.

(*Assoc. Med. Journal*, March 2, 1855.)

Cases of this kind are very rare; two only have been seen by Dr. Denman, one by the late Dr. Merriman, and one by the present Dr. Ramsbotham, in a recent state while the patient was alive. The value of this case is increased by the remarks which accompany it.

CASE.—Mrs. H—, æt. 25, residing near Paddington Green, a fine strong woman, was delivered of her first child, with the *funis twice twisted* round the child's neck, on January 31st, at 3 P. M., by Mrs. Collen, of Paddington Street, a midwife of considerable experience, after a natural labor of sixteen hours' duration. The pains occurred at rather longer intervals than usual, and were very forcing. About an hour after the child was born, I arrived in consequence of a hasty summons, when the patient presented the following state: The whole of the uterus, dragging a small portion of the posterior part of the vagina with it, was lying (like a scrotal hernia) without the os externum; it was covered with the deciduary and other membranes, and the placenta was entirely attached to its fundus. The patient was lying upon her back, with her knees bent up. She was pulseless, had difficulty of breathing, was cold, prostrated, and exhausted—in fact, in a state of collapse. The uterus had been exposed for three-quarters of an hour, and had become much contracted. I immediately detached the placenta, by inserting the index-finger of my right hand between it and the uterus, and then peeled off the membranes attached to it (those which spring from the placenta.) The midwife now well greased my left arm and hand, with which I grasped the uterus, and returned it within the vagina. I then withdrew my hand a little, formed my fingers into a cone, reintroduced it, gently carrying the fundus before me until I had carried it up to a level with the patient's umbilicus, when I had the satisfaction of finding that the uterus had righted itself into its normal position in the pelvis. Its neck and os then commenced a gradual contraction on the fingers, when I carefully and steadily withdrew my hand, desiring the midwife at the same time to make pressure just above the pubes with her hand. After the withdrawal of mine, I had a saucer placed upon the lower part of the abdomen, and a bandage bound tightly over it.

During this time, which lasted about fifteen minutes, the patient was in a state of great exhaustion, and it was only by the aid of brandy that I could at all arouse her. I remained with her an hour, by which time she rallied con-

siderably. I then left, prescribing for her a mixture of sulphuric acid, sulphuric ether, and camphor mixture, every two hours.

At 10 o'clock I was again sent for, as a return was feared; but, on examining, I found it was only a clot escaping, and I placed a sponge in the vagina.

February 1st.—The patient remained in a very low state; the pulse was 150, and feeble; she was very thirsty; the discharge was moderate. She was ordered to continue the mixture.

2d.—The pulse was 120. The patient was very excited, with peritonitis threatening. I ordered two grains of opium and five of calomel to be taken directly, and a saline mixture with prussic acid. The patient had a desire to micturate, and for the first time I desired her to be moved for that purpose, when she passed a great quantity of urine. She felt exhausted, but much relieved.

3d.—The pulse was 110. She had had four very liquid stools in the night, which produced faintness. She complained of much pain in the bowels, and was restless. The tongue was furred; there was a dragging or tearing pain in the bowels; the discharge was offensive and purulent. I ordered fifteen leeches to be applied to the epigastrium, and a poultice afterwards; I also prescribed gray and Dover's powders to be taken every three hours, and an effervescing saline draught with an excess of ammonia and prussic acid every four hours.

4th.—She was better in every respect. The medicines were continued.

5th.—She was progressing favorably.

She continued daily to get better. Her milk came on the ninth day; and I left her convalescent at the end of three weeks.

"The midwife assured me," says Mr. Borham, "that she did not use the slightest traction at the funis after the birth of the child, but that the uterus and attached membranes came out all at once with one pain about half an hour after the child was expelled; and she thinking it a 'tumor,' desired I might be instantly sent for. The funis being twice convoluted round the child's neck, greatly reduced its remaining length, and doubtless this circumstance assisted considerably in dragging down the fundus, particularly as the pains were described as 'very forcing'; the fundus thus becoming cup-shaped from the unavoidable traction, the whole uterus soon became inverted and expelled.

"There is a division of opinion as to the advisability of detaching the placenta from an inverted womb before returning it. Much must of course depend upon the contracted state of this organ; the length of time it has been exposed, &c.; but I think the placenta should always be separated before returning the uterus, if the latter be in a *contracted state*; for the less the substance to be returned the easier is it accomplished. Nor need we fear hemorrhage, for the uterus being inverted, would drag down the uterine arteries into its inverted cavity; they would become intussuscepted, the uterus contracting upon them, forming an artificial tourniquet; and thus the supply to the uterine sinuses would be cut off (as was the case in this instance, for there was no hemorrhage during the operation of detachment). I therefore cannot think, with some authorities, that the patient is sure immediately to die of profuse hemorrhage if the placenta be detached. On the other hand, if the uterus were in a very relaxed state, and its os well dilated or easily dilatable, the hemorrhage might indeed be great if the placenta were partly detached; and in such a state there would be little difficulty in returning the whole mass, and perhaps it would be advisable to do so. But in a case like my own, it was desirable to return the uterus with as little addition to it as possible, owing to the contracted state of that tissue.

"That the uterus should be *immediately* returned there cannot be two opinions; or its contraction would soon prevent its return. The diminished size of the os would prevent the fundus from returning through it to its normal position, and strangulation would ensue, with its evil consequences. That peritonitis ensued in my case is not to be wondered at, considering how the peritoneum must have been interfered with by such a sudden revulsion of its tissue. The favorable termination of the case will certainly add a good practical confirmation to the opinion of those who are in favor of removing the placenta before returning the uterus. The uterus did not return with a sudden jerk, such as is usually ascribed to such cases.

ART. 108.—*A new operation for lacerated Perinæum.* By M. JOBERT.

(Gaz. Hebdomadaire de Médecine, Nov. 10, 1854.)

The peculiarity of this operation is in the suture. After having pared the edges of the wound, M. Jobert threads a broad lace lengthwise through them, and then drawing the lace, he puckers all the edges to a point, precisely as the mouth of a tobacco-pouch is closed by drawing the string. M. Jobert appears to have operated in this way in more than one instance.

CASE.—Eliza Dorvilliers, æt. 23, staymaker. The labor, in which the perinæum gave way, was her first and only one; it occurred on April 5th, 1854. The child was dead. Except so far as concerned the wretchedness of the local accident, her recovery was prompt and satisfactory.

She was admitted into the Hôpital de la Clinique, under M. Jobert, on the 25th of August, 1854. At this time her general health was pretty good. Three days previously she had menstruated for the first time since her confinement. She had no power of retaining flatus, or fæces if at all fluid. The perinæum is completely lacerated, and the recto-vaginal septum is torn to a certain extent (about 3 centimetres). The lacerated edges are retracted and cicatrized. The neighboring skin is red and somewhat tumefied.

Having prepared the patient by several baths and a purgative enema, administered the night before, M. Jobert proceeded to operate on the 1st of September.

Having placed the patient in a position for lithotomy, the edges of the wound were pared. This took considerable time, and it was attended with much hemorrhage. Then three threads were taken and introduced in succession, the one through the length of the upper border of the wound, the second through one side of the lacerated perinæum, and the third through the other side. After this, these threads were drawn tight and tied in a double knot. Last of all, incisions were made on each side, to take off the tension.

The case progressed favorably without any remarkable event. On the 6th, the threads were removed, and union appeared complete. On the 8th, there having been no motion up to this time, several unwise efforts were made at the close-stool, but without any ill consequences. On the 15th, a careful examination was made, when there was found to be a minute fistulous communication between the vagina and rectum. This was touched with a point of lunar caustic. On the 24th, this opening was completely closed, and the patient had recovered complete power over the bowel. The perinæum is about 3 centimetres broad, and appears to be very solid. On the 26th October, she left the hospital quite well.

ART. 109.—*Case of lacerated Perinæum treated by subcutaneous division of the Sphincter and sutures.* By Dr. W. PARKER, Professor of Surgery in the College of Surgeons, New York.

(New York Journal of Medicine, Nov. 1854.)

In a former volume ("Abstract," XIX.) Dr. Lever relates two cases of lacerated perinæum in which the main peculiarity was the subcutaneous division of the coccygeal attachments of the sphincter and levatores ani, by Mr. Hilton. These cases occurred respectively on the 26th August, 1848, and the 10th February, 1849. In October, 1849, Dr. Parker performed a similar operation, without being aware that it had ever been proposed to divide the muscles in these cases, subcutaneously or otherwise; and he now relates the case.

CASE.—I was called, on the 24th of October, 1849, to see Mrs. M—, who had recently been delivered of her first child. Her labor was terminated with instruments; and an extensive laceration of the perinæum, involving the sphincter ani, followed their employment. I was called in consultation a day or two after her confinement, to relieve, if possible, by an operation, her unfortunate condition.

On examining the parts, I found the laceration very extensive, extending fairly

through the sphincter ani, the edges being widely separated, and the torn ends of the muscle drawn upon either side toward the coccyx. The appearance of the wound resembled that which is produced on dividing the orbicularis oris, the edges of the wound being drawn widely and permanently asunder by the contraction of the muscle.

The appearance of the wound suggested the method of cure. It would be difficult to retain the approximated edges of the lacerated parts of the anus in apposition while the sphincter remained in its present condition, strongly retracting its lacerated edges towards the coccyx. I accordingly proposed to divide the sphincter subcutaneously, but thoroughly, on each side of the coccyx, and then, after trimming the edges of the perineal laceration, approximate the lips of the wound, and retain them by deep clamp or quill sutures. The operation was acceded to by the gentlemen in attendance, and I proceeded at once to operate. The sphincter was thoroughly divided at the points above indicated; and the edges of the wound, pared, were easily approximated and retained by the quill suture. The bowels were confined by opiates for several days, and finally moved with injections of sweet oil. Union readily took place, and the result was most satisfactory.

ART. 110.—*A new operation for lacerated Perinæum.* By M. REYBARD.

(*Gaz. Méd. de Lyons*; and *Gaz. Méd. de Paris*, Jan, 27, 1855.)

The first part of this operation is to prick a row of pins through the edges of the fissure so that their points may project into the vaginal surface. Three pins enter into each row, and their length varies with the thickness of the part. The next thing is to take two small pieces of gutta percha bougie, one for each side, and to fix the points of the three pins into it. Last of all, the edges of the fissure are to be brought into contact by tying the corresponding pin's heads together with waxed thread.

Mr. Heybard has operated in this manner in one case, but no particulars are given.

(B) CONCERNING THE DISEASES OF WOMEN.

ART. 111.—*On the treatment of the inflamed breasts of Nurses.* By M. REITZENBECK, of Prague.

(*Gaz. Méd. de Paris*, Oct. 28, 1854.)

The method here recommended is so simple, that no one need hesitate to adopt it, provided he is called in before the mischief has reached a certain degree of development.

It is well known that engorgements of the mammary glands are frequently caused by chapped nipple. The inflammation of the skin extends directly into the ducts, exudations take place by which some of these ducts are plugged up, the milk is pent in, and hence the engorgement. If now, in such a case, the breast be surrounded with the hands, and pressure made in the direction of the nipple, a thin, transparent, whitish vesicle, is caused, by the milk accumulating behind the closed orifices of the ducts. It is necessary, then, to do this, and having done it, the next thing is to prick the vesicle with a needle, to remove any epithelial scales which may be present, and to apply the infant. If time has not been lost unnecessarily, the relief is almost immediate, and pain and tumefaction disappear in a few minutes; but even when it is otherwise the relief is very marked, and by repeating the process a few times, the sufferer is relieved altogether.

ART. 112.—*Injection of Chloroform vapor into the Uterine Cavity to relieve pain.*

By M. ARAN.

(*Bull. Gén. de Ther.* Jan. 1855; and *Medico-Chir. Review*, April, 1855.)

M. Aran, extending the local application of the vapor of chloroform in uterine

affections, recommended by Dr. Hardy, of Dublin, has adapted to Hardy's apparatus a hollow uterine sound, pierced at the end by two openings; this is passed into the uterine cavity. Caution is advised not to inject the vapor too suddenly, lest the uterus be distended; but done gradually, it is said that instant relief is given to uterine pain. Five cases are reported; in three the effect was favorable; in one of these, a case of post-puerperal metritis, pain was immediately suspended, and on a second injection altogether stopped; in a second, a case of chronic metritis, with an irritable condition of the uterus, two injections produced a permanent amelioration; in the third, a case of retroflexion, in which the intra-uterine pessary could not be borne, after a few injections the instrument could be worn for several days at a time. In the two other cases, the effect was not so marked: in one, of retroflexion with chronic inflammation, the injections at first caused great pain, it is supposed from being forced too rapidly, but relief followed; in the other, of obstinate dysmenorrhœa with colics and nervous phenomena, relief was but momentary, whilst the injection of a few drops of laudanum into the uterine cavity gave ease which lasted for twenty-four hours.

ART. 113.—*Blennorrhagia of the excretory duct of the vulvo-vaginal canal.*

By M. SALMON.

(*L'Union Médicale*, Dec. 2, 1854; and *Medical Times and Gazette*, Dec. 23, 1854.)

The author directs attention to an affection very common among prostitutes, yet little known to the generality of practitioners, namely, purulent hypersecretion of the excretory duct of the vulvo-vaginal gland, a disease first pointed out by M. Huguier, and described by him as the occasional source of blennorrhagia in the male. It is now universally known, that there exists on each side of the vagina, at the orifice, and imbedded in the labia, a glandular body, the duct of which, half an inch long, opens just at the base of the hymen, or by the caruncule myrtiformes. During erotic excitement, a viscid fluid, similar to the prostatic fluid in the male, is abundantly poured forth to lubricate the female external organs. That the duct of this gland may become the seat of one variety of blennorrhagia is shown by the following cases:—

A girl, æt. 18, named Heloise, came from Paris for the purpose of prostitution, and was immediately subjected to medical inspection. There was nothing morbid in the urethra, the vagina, the excretory duct of the gland, nor in the anus, but there was a slight ulceration of the neck of the uterus, which the author cauterized; he then kept the girl in the hospital some days. She was subsequently re-examined, pronounced sound, and discharged. There was the same freedom from disease upon two successive examinations, at intervals of ten days; but shortly after the last visit she was marked as having infected a young man of respectability with a profuse blennorrhagia. Dr. Salmon examined her with great care, but found no disease in the urethra, vagina, or anus. Upon investigating the condition of the vulvo-vaginal gland, he noticed, upon pressing it with his finger from behind forwards, from the ischium towards the caruncule myrtiformes, that there flowed from the orifice of the duct a moderate quantity of thick yellow pus; there was also a well-marked increase of volume in the part. This condition remaining unchanged for several days, the author injected a solution of nitrate of silver into the gland by means of one of Anel's syringes. No improvement ensuing after a fair trial, the orifice of the duct was cauterized by the tincture of iodine, applied by means of a fine bougie. This plan was continued for four days; the discharge became gradually less, and the patient was discharged cured twenty-five days after her admission.

A girl, named D—, had been living in a reception-house at Chartres fifteen days. She came from the environs of Rambouillet. A soldier pointed her out shortly as having infected him with blennorrhagia, when she was subjected to examination, and found to be suffering from this inflammatory condition of the vulvo-vaginal gland. After a visit of a fortnight to the hospital, during which time she was subjected to proper treatment, she was dismissed cured.

Several other similar cases are recorded, from the consideration of which the author arrives at the following conclusions:—

1. Blennorrhagia of the duct of the vulvo-vaginal gland is more common among young prostitutes who have just commenced their mode of life, than among those who have been long accustomed to it. All the cases recorded by the author were those of young women who had recently been admitted into the receiving-houses.

2. This form of blennorrhagia mostly affects the left side. Out of eight patients, the left gland was affected in six cases. The orifice of the duct is more easily observed on this side. The reason for this preference is not clear; for one cannot accept the explanation of Huguier, that it is due to pressure upon the left iliac vessels by the sigmoid flexure of the colon distended by fæces.

3. It is written by authors who have treated of abscess of the labia-majora, that excess of coitus is often a cause of the malady. This statement is verified by the fact, that the house which rendered the greater number of the cases related in Dr. Salmon's paper was much frequented, and its inmates, mostly young, were subjected to frequent and daily intercourse.

4. Blennorrhagia of the duct of the vulvo-vaginal gland is very common. It may exist without the coincidence of blennorrhagia of the urethra and vagina; it becomes the cause of an analogous affection in men. Eight clear cases in verification of this statement have been witnessed in the town of Chartres. In all, this form of blennorrhagia of the female existed alone; in two cases, attention was first directed to the girl by the complaint of the men who had become infected.

5. It is most important that medical men should turn their attention to this point in the examination of females.

6. The signs by which the disease may be known are derived from examination only. The woman experiences no inconvenience, nor does she think that she needs medical aid. Moreover, she may, if she please, conceal her disease, by making water, or by using as an injection a strong solution of alum, shortly before the visit of the inspector. This discharge of pus may easily be overlooked, owing to the narrowness of the duct. It is necessary that the surgeon should first make moderate pressure of the labia against the rami of the ischia, by the thumb applied in front of the anus, that it may be ascertained whether the gland be tumefied. In the natural state, it cannot be detected by the touch; if swollen, it feels like a rounded body, the size of a nut or larger. Firmer pressure made against the ischium from within will cause the contents to escape. The normally constituted fluid is thick and clear, and appears at the extremity of the duct in not larger quantity than a drop or two. The fluid from the inflamed gland is either thick, more abundant, and mixed with mucus, when the girl should be put under surveillance; or yellow and puriform, when she should be removed to an hospital.

7. The treatment resembles that of blennorrhagia in other situations. The result is much more rapid. Absolute rest; injections of nitrate of silver, with Anel's syringe; cauterization with the tincture of iodine; baths. The duration is about twenty days.

ART. 114.—*Some facts bearing upon Retroflexio Uteri.* By M. A. PORCHAT, Interne at the Foundling Hospital.

(*Gaz. Méd. de Paris*, Nov. 25th, 1854.)

The great number of autopsies made daily in the Foundling Hospital has given me the opportunity of investigating the direction of the uterus in very young female children. The greater number of those examined were about two years of age: some were only a few days old. In the majority the uterus was antiflexed, and I am inclined to believe, with M. Boulard, that this direction most usually exists. Nevertheless, I have several times seen retroflexion. In some instances the retroflexion was very evident. Once the uterus was so retroflected that the superior portion had fallen back so as to become nearly parallel to the inferior portion. But retroflexion is not always so marked; the specimen which

I presented was pronounced by high authority to be simply retroverted, it being considered that there was no twisting of the neck of the organ. I believe still that the body and the neck formed an obtuse angle, and that the uterus was therefore retroflected. The direction of the uterus depends in some degree upon the situation of the rectum: when the rectum deviates much to the right the uterus falls directly backwards; but it may, under other circumstances, undergo a lateral deviation. The appendages of the uterus occupy very different positions. The flexion of the uterus is not, in my opinion, the result of cadaveric alterations, and the degree of flexion has no relation to the distension of the intestine by gas. I have seen the uterus flexed in subjects where the intestine was not distended at all; and it, therefore, is probable that the cause of its direction is to be sought in the particular disposition of the tissue of the organ. The uterus in infants is soft, and falls naturally upon itself; and we have no right to regard this circumstance otherwise than as normal, and we cannot attribute to the organ any one fixed position. In the greater number of instances, however, it was antifixated.

ART. 115.—*The treatment of Prolapsus Uteri by Zwancke's Pessary.* By Professor CHIARI.

(*Zeitsch. des G. des Aertze zu Wien*; and *Med.-Chir. Rev.* Jan. 1855.)

Professor Chiari speaks favorably of a form of uterine pessary contrived by Zwancke, of Hamburg. This instrument consists of two spoon-shaped blades, which are prolonged below into simple stems, and joined together by a Charrier's hinge, so that by means of a screw the two blades may be made to diverge from each other. It is introduced with the blades in opposition: their separation when inserted expands the upper part of the vaginal canal, and supports the uterus. Chiari says it is very efficacious, easily worn, gives no pain, and occasions no hindrance to walking. He has used it with most successful results in many cases.

ART. 116.—*On Sponge Pessaries.* By M. YVAREN, of Avignon.

(*Gaz. Hébdom.* Dec. 22, 1854.)

M. Yvaren writes two long articles for the purpose of showing the advantages of pessaries made of sponge. They are soft and elastic, easily managed, and, instead of causing irritation like ordinary pessaries, they have, he tells us, a powerful action in allaying irritation. Like the cotton wool plug, also, they restrain or arrest ordinary mucous discharges.

ART. 117.—*On the excision of large pedunculated Uterine polypi.* By Professor SIMPSON.

(*Edinburgh Monthly Journal*, Jan. 1855.)

Professor Simpson recommends excision by means of an appropriate cutting hook, or *polyptome*, and says, that this mode of practice is as simple as it is safe. The instrument is of the form of the usual midwifery hook, the concavity being made cutting instead of round, by the insertion of a small piece of well-tempered steel blade into it. The entire length is ten inches, and four inches of the length are taken up by the handle—which is furnished with a knob to indicate the direction of the hook.

In employing this polyptome, the stalk of the polypus is first to be reached by the apex of the first finger of the right hand, introduced along the short anterior or pubic surface of the vagina; the instrument is then pushed by the left hand along this finger as a guide, and passed over or above the peduncle of the tumor, in such a direction that the concavity of the hook will come down upon and embrace this peduncle, as the instrument is pulled again downwards. The next step is to make the blade of the polypus-knife cut through the stalk of the tumor. For this purpose, a little simple traction, with a slight rolling or sawing motion, is all that is generally required. If the tissue of the peduncle is dense and strong, the dividing force of the instrument may be increased by the forefinger of one hand being applied with a tractive power to the blunt extremity

of the instrument, while the handle is dragged down and moved in a sawing direction, by the other hand of the operator. Sometimes when the polypus is round and loose, after the curve or hook is applied to its pedicle, the cutting portion of the polypsome will divide this stalk most readily, by merely doubling backwards with the fingers the body of the polypus upon its own stalk, and pulling the knife against the bent peduncle. In such a case, the peduncle is divided as much by pressing it against the knife, as by pulling the knife through the peduncle.

Dr. Simpson then proceeds to set forth the advantages of excision over deligation by comparing and contrasting the two operations.

I.—*Relative difficulty of the Excision and Deligation of Uterine Polypi.*

"No practitioner can ever be perfectly certain that any large growth detected in the vagina, is a uterine polypus, until his finger touches and traces the peduncle itself of the tumor. And wherever the finger can thus be made to pass and detect the stalk of the polypus, the polypsome may certainly be guided to, and applied so as to divide that stalk. I refer here to cases of considerable difficulty, from the unusual shape or size of the polypus. In such instances, one cannot but conceive it easier to pass upwards a solid curved instrument directly around the mere stalk of the tumor, than to pass a piece of whipcord or other ligature *behind* and *over* the whole body and mass of the polypus itself, till, in being retracted, it comes indirectly and ultimately to embrace the stalk. For example; in Plate I. fig. 3, there is a sketch of a large uterine polypus, which I some time ago amputated with the polypsome. The plate represents the polypus of the natural size—A marking the upper, and B the inferior extremity of the polypus, while C denotes the site and thickness of the peduncle of the tumor, as divided by the polypsome. In this instance, the polypus is of an elongated form, its peduncle being attached to its middle, and not to its upper extremity. The tumor had evidently grown into this form after being expelled from the uterus into the vagina. It had developed upwards towards the roof of the vagina, as much, or more than downwards. In this case, the peduncle of the tumor was readily caught and divided by the polypsome; but it would evidently have been a matter of great difficulty to have passed a ligature over the back and top of such a polypus, so as to embrace with it the peduncle from above.

"When, however, a polypus is smaller, round or oblong, and its peduncle is attached to its upper part, there is not more difficulty in applying the ligature, than in applying the knife to the stalk of it. Some, however, of the practitioners who have had most experience with the ligature, confess to the occasional difficulty of its application, with even the best kind of canula. 'By practice and dexterity,' says Dr. Burns, 'this instrument (the double fixed canula) may doubtless be adequate to the object in view, but without these requisites, the operator will be foiled—the ligature twisting, or going past the tumor; every attempt giving much uneasiness to the patient, and not unfrequently, after many trials and much irritation, the patient is left exhausted with fatigue, vexation, and loss of blood. This is very likely to happen if the polypus be so large as to fill the vagina. Dr. Hunter,' adds Dr. Burns, 'after repeated trials, failed in a case where the polypus filled the vagina; the pedicle in the preparation is long, and as thick as the finger.'* The application of a ligature to a large uterine polypus is, 'in many cases (Dr. Hamilton† testifies) one of the most difficult and dangerous operations in surgery;' and he tells us that 'he has seen some of the most eminent practical surgeons of this part of the kingdom foiled in their endeavors to apply the ligature.'

"I quote, in preference, such opinions from the writings of Professors Burns and Hamilton, because both of these gentlemen were strongly in favor of the operation of deligation."

II.—*Relative duration of the Operation of Deligation and Excision.*

"The process of excision is generally accomplished in the course of two or

* Burns's Principles of Midwifery, p. 180.

† Hamilton's Practical Observations, p. 40.

three minutes at most; sometimes in a shorter period. On the contrary, the deligation of a uterine polypus consists of a succession of operations rather than of one; and is usually protracted through a period, varying from two or three days to two or three weeks. The application itself of the ligature and canula, in the first instance, requires as much, or indeed more, time and pains than the act of excision. But, after its first application, the ligature requires to be tightened and adjusted from time to time. 'Twice a day (as Dr. Gooch directs) the ligature is to be untwisted from the shoulder of the canula, drawn tighter, and then fixed again round the projecting part; and this is to be done morning and night.' 'Every day (observes Sir Charles Clark, another advocate, like Dr. Gooch, for this mode of treatment) the practitioner is to examine the state of the ligature, and as often as it is found to be at all slack, it is to be tightened. The mode of tightening it,' he continues, 'requires particular attention. If the canula should happen to be long, the practitioner should not hold the end of it whilst he tightens the ligature, lest with the force used the ligature should cut through the neck of the tumor, and the other extremity of the canula should be suddenly and forcibly pushed against the internal parts of the woman. The time,' he adds, 'at which the ligature will come away will depend upon the thickness and firmness of the neck of the tumor, and the tightness with which the ligature is at first applied. The neck of the tumor sometimes is cut through in four days, sometimes ten or twelve days will elapse between the application of the ligature and the removal of the tumor, and occasionally the separation of the tumor will take up three weeks; but this is an uncommon occurrence.* 'After an interval,' observes Dr. Churchill, 'varying from six days to three weeks, the canula will be found loose in the vagina, and the stalk of the polypus severed.'†

III.—*Relative care and management after the two Operations.*

"After the operation of excision, the only special treatment in general required is the introduction of a sufficient plug, of sponge or other soft material, into the vagina, to prevent the chance of bleeding; and the withdrawal of this plug after ten or twenty hours. After, however, the application of the ligature in deligation of a uterine polypus, a considerable amount of continuous care and caution is necessary up to the time at which the pedicle is ultimately divided. 'The patient is,' says Sir Charles Clarke, 'to be desired to remain constantly upon her side, and should not be allowed to move from one side to another unless when the practitioner is present. For want of attention to this caution, there is,' he adds, 'reason to believe that the canula has been inadvertently pressed against, and its extremity pushed through the uterus of the patient, so as to occasion her death.'—(p. 262.) 'The woman,' as Dr. Ramsbotham states, 'will be obliged to keep her bed during the sloughing process; and she ought to be cautioned, upon attending to her natural calls, to beware of any accidental occurrence which might push the point of the instrument against the internal surface of the uterus.‡ 'As the instrument,' Dr. Gooch remarks, 'projects out of the vagina, if the patient was, whilst turning from side to side, to sit down upon it, she might impale herself on it,—an accident which, I have heard, once took place, and terminated fatally.'—(p. 264.)

IV.—*Relative chance of local irritation of the Vagina and Uterus.*

"Local lesion and irritation of the vagina and cervix uteri, are not liable to follow upon the practice of excision, unless some local injury has resulted in the operation from very incautious manipulation. But in addition to this danger, there is after deligation, other sources of local disease in the sloughing and putrefaction of the polypus, before its complete separation; in the presence of the very fetid and excoriating fluid, with which the surface of the vagina and vulva is in consequence constantly bathed; and in the irritation by the ligature itself, as a foreign body, upon the constricted and ulcerating stalk of the tumor,—not to speak of the constant application to this ulcerated surface of the foul

* Observations on the Diseases of Females, p. 263.

† On the Diseases of Females, p. 223.

‡ Dr. John Ramsbotham's Practical Observations, vol. ii. p. 468.

and acrid discharges that issue from the dead and decomposing polypoid structure. The polypus usually swells after the first application of the ligature. 'On account,' observes Chelius, 'of the increasing bulk of the polyp, it is generally necessary for the first few days (after deligation) to empty the bladder with the catheter, and the rectum by clysters. The symptoms,' he further states, 'which may occur after the tie has been made are, violent inflammation and fever, pain, spasm, bleeding, and other symptoms, from the pressure of the swelling polyp. To prevent,' he adds, 'the effect of the stinking ichor, repeated injections of decoction of aromatic herbs must be employed.* After the ligature is applied, 'When putrefaction has commenced, the discharge from the vagina (to quote the words of Dr. Ramsbotham) becomes fetid and highly offensive. . . . It is, indeed, the best sign we can observe, as it proves that decay is going on, that the stem is sufficiently compressed to strangle the vessels which nourished the diseased growth. If ever (he adds) such a discharge did not take place in a day or two, I should be suspicious that the operation would not succeed.'†

V.—*Relative danger of the two Operations to the health and life of the Patient.*

"Those authors who have written in favor of deligation usually quote one solitary case of death from hemorrhage after excision, recorded by Zacutus Luzitanus, in the 17th century. It was an instance of the fact, that the amount of attendant hemorrhage is not regulated by the mere size of the polypus; for, in the case in question, it is stated that the amputated polypus was not larger than an almond.‡ In this instance the operation was performed by an empiric, and no plug or other means for arresting the hemorrhage, appear to have been employed. The patient died, not so much from the operation, as from neglect of all proper means to restrain the hemorrhage resulting from it. At the same time let me remark, in passing, that the operation of deligation itself is not free from the risk of hemorrhage, both from the abrasion of the surface of the tumor in working with the canula and ligature, and from the division of the vessels of the stalk, as they are cut through in the process of deligation. 'I think,' maintains Dr. Meigs, of Philadelphia, 'the ligature is to be preferred to all other modes of extirpation. It is not in every case to be effected without hemorrhage. I know (he adds) of two cases here in which the hemorrhage was terrible.'§

"But the principal danger to health and life in this, as after other surgical operations, is the danger of phlebitis and surgical fever. Is such a consequence more liable to follow upon the instantaneous resection of the peduncle of a polypus, and the subsequent immediate removal of the amputated polypus itself,—or is it more likely to supervene upon the slow process of disjunctive ulceration being set up in the stalk of the polypus by the ligature, while the gangrenous and putrefying polypus itself, is left decomposing in the cavity of the vagina?

"I believe that no physician or surgeon acquainted with modern pathology, will have any difficulty in answering, that the danger of phlebitis is much greater under the latter circumstances than under the former. The recorded experience of some of those who have written in favor of the ligature, shows strongly enough the occasional liability under deligation to the occurrence of irritative fever and internal inflammations, from phlebitis and the absorption of putrid and purulent matter from the vagina. Dr. Hamilton|| mentions three cases of death which he had seen follow the removal of uterine polypi by ligature. 'On a close inquiry,' observes Mr. Arnott, 'I find that even those who use it (the ligature) acknowledge that occasionally cases have been met with, where the ligature in cutting its way through, has excited irritation and fever, and even death. Two cases have been described to me by the practitioners concerned where this occurred, and in casually referring to the interesting works of Boivin

* System of Surgery, South's edition, vol. ii. p. 752.

† London Medical Gazette for 1835, p. 435.

‡ Praxis Medica, lib. ii. Obs. 86.

§ Meigs's Females and their Diseases, p. 255. See also Examples in Colombat de l'Isere's Traité des Maladies des Femmes, p. 617.

|| Hamilton, Prac. Observ. p. 37.

and Duges, I find two similar ones.* In his lectures on fibrous tumors of the uterus, Dupuytren† states, 'I possess eight or ten observations of women who have perished, from veritable poisoning and absorption of pus, after the application of the ligature for uterine polypus.'

"I have myself seen a woman die with a ligature still fixed around the partially divided neck of a uterine polypus; and other cases where severe but not fatal attacks of phlegmasia dolens and phlebitis followed deligation. Twelve or thirteen years ago, on a patient of Dr. Edgar's, of Berwick, I applied a silver wire ligature to the neck of a large polypus, and tightened it from time to time, according to the usual rules. In the course of a few days the polypus was dead and putrefying; there was much heat and irritation in the vagina; and the patient's pulse became rapid under the irritative fever that followed. On strongly tightening the ligature to expedite as much as possible the total amputation of the polypus, the wire broke; and the canula and wire slipped off. I immediately proceeded to remove the polypus by excision instead of making any renewed attempt at deligation; and the result was to me very striking and satisfactory. Within twenty-four hours the local irritation had greatly subsided, and the constitutional disturbance entirely disappeared. From that time to this I have operated on many uterine polypi, but never again by the process of slow deligation. And the more that I have seen of the practice of removing large pediculated uterine polypi by excision, the more deeply has the conviction grown upon my mind, that this method is very superior to the usual method followed in this country, of the removal of them by the canula and ligature."

ART. 118.—*Extirpation of an inverted Uterus.* By Dr. GEDDINGS, Professor of Surgery in the Medical College of South Carolina.

(*Charleston Med. Journal*; and *Dublin Medical Press*, Jan. 10, 1855.)

We give the case as related by the author.

CASE.—On the 16th of May, 1854, I was requested by Dr. Pelzer to meet him in consultation, in the case of a negro woman belonging to Mr. White. On my arrival, Dr. Pelzer called my attention to a large pyriform tumor equal in magnitude to a fetal head at the full term, which, proceeding from within the vagina, hung pendent between the thighs. This tumor was large and rounded below, but contracted into a rather thick pedicle above, which could be traced about three-fourths of an inch within the vulva, at which point its contour was surrounded by a kind of cul de sac, beyond which the finger could not be passed. Its whole surface was covered by a rough, thickened mucous membrane, abraded and ulcerated on many points, considerably inflamed, and disposed to bleed when roughly handled. In the general aspect, it bore a strong resemblance to a case of prolapsus of the uterus, of long standing, but the uniform roundness of the most dependent part, together with the absence of the os tincæ, served at once to convince us that it was of a totally different nature.

The first supposition that presented itself to my mind was, that it might be a case of prolapsus of the bladder, of such long duration that the walls of the organ had become very much thickened, and otherwise altered in texture. But, on introducing the catheter, and passing my index finger around the neck of the tumor within the vulva, I was enabled readily to discover that it was a case of complete inversion, with extensive hypertrophy of the uterus, of ancient date. The orifice of the urethra was but little removed from its normal position, and in passing my finger up, on the posterior and lateral aspect of the neck of the tumor, as far as the reflected walls of the vagina would allow it to reach, I could distinctly discover the elastic feel imparted by the convolutions of the small intestines, which rested on the partially inverted walls of the vagina.

How long the inversion had existed could not be satisfactorily ascertained; but as there is reason to suspect that the accident must have occurred at the period of her last delivery, an approximative conclusion may be drawn from the

* Arnott, in *London Med. Gazette*, 1836, p. 412. See also notices of two other cases of death from uterine phlebitis after deligation, in *Cyclopedia of Practical Medicine*, vol. iv. p. 393.

† *Leçons Orales*, Brussels ed., 1826, p. 237.

fact that her youngest child, a daughter, was present, and had the appearance of a person of from eighteen to twenty years of age. The report of the woman herself was, that she had been greatly annoyed by the tumor for many years, but had generally been enabled, by partially forcing it up into the vagina, and sustaining it there by means of a T bandage, to pursue her ordinary avocations. Latterly, it had increased so much in size as to render this impracticable, and, at the period of our visit, any attempt at replacement, however partial, was productive of excruciating pain. She was, besides, suffering so much from engorgement and inflammation of the inverted organ that, considering this, together with the partial and uncertain benefit likely to accrue from any merely palliative treatment, it became a serious question how we could most readily and efficiently relieve our patient.

Reflecting on all the circumstances of the case, it occurred to me that excision of the entire inverted organ presented a rational prospect of relieving not only the present sufferings, but also the cause of much future annoyance. The vagina being also partly inverted, the danger of such an operation was materially diminished, inasmuch as we would, in consequence of that condition, be enabled to excise the entire mass by cutting through the vaginal walls, thus leaving the substance of the uterus untouched.

Dr. Pelzer concurring with me, I seized the neck of the tumor as high up as possible, between the thumb and index finger, and manipulating in such manner as to satisfy myself that it contained none of the convolutions of the intestines, I proceeded to include it in a strong ligature, for the twofold purpose of preventing the protrusion of the intestines, and obviating any serious hemorrhage. The neck of the tumor was then cut through, a little below the ligature, with a single swipe of a probe-pointed bistoury. The operation was exceedingly simple and easy, was attended with no great pain, and, as may be supposed, was executed in a few seconds. The after-treatment presented no features of particular interest, and the case progressed so favorably that after a few days I was enabled to discontinue my visits, leaving the patient in the hands of Dr. Pelzer, who in a short time transferred her to Professor Frost, the family physician, who, at the period of our attendance, was absent from the city. She speedily recovered, and, as I understand, has since done well.

On making a section of the tumor, it was found to present a solid homogeneous mass, of a grayish-white texture, and fibrous appearance. The whole cavity formed by the inversion of the walls had become obliterated by adhesions between the opposing peritoneal surfaces; but the point of junction between the vagina and the contour of the cervix could be distinctly recognized, the incision, as stated above, having passed through the walls of the vagina. Partial and complete extirpation of the uterus for various objects—inversion, prolapsus, carcinomatous, and other degenerations of its structure—has been so often practised, that the simple operation, and the description of which I have detailed, possess no claims to interest in point of novelty; yet it has some value as affording an additional instance to prove that, under similar circumstances, the unfortunate victims of a displacement so deplorable, may often be relieved of much suffering and inconvenience. It might be interesting to collect full references to the numerous cases in which extirpation has been practised on account of inversion, but as I have not time to execute the task, I must content myself with this brief and imperfect exposition of a single case.

ART. 119.—*Cases of Ovariectomy.* By (1) Dr. DUNLOP, of Ohio; and (2) Dr. CRAIG, of Kentucky.

1. (*American Journal of Medical Science*, Oct. 1854.)
2. (*Ibid.* Jan. 1855.)

The three cases we have to report occurred in the United States. Dr. Dunlop's name is connected with a case given in our last volume. Dr. Dunlop has also been concerned as a principal in four cases, three of which were successful. One of these patients has given birth to a healthy male child since the operation.

Dr. Dunlop's Cases.—1. Mrs. B., of Bracken County, Kentucky, æt. 37, and mother of five children. She was much reduced in flesh, and her abdomen enormously distended by an ovarian tumor, fluctuation being everywhere present except in the right iliac region. She had been once tapped.

Ovariectomy was performed in the usual way on the 24th March, 1853. Few adhesions were met with, except where the trocar had penetrated. The time occupied in the operation and the subsequent dressing, was twenty-five minutes, and not more than four ounces of blood were lost. The patient was altogether unconscious all the time, woke up on sprinkling a little cold water in her face, when the pulse was 80, and, so far as could be seen, in the same state as before the operation.

Two hours afterwards, the pulse rose to 88, and a little pain was felt in the abdomen. In the course of the evening, she became restless, and vomited several times; her feet also were cold. The medicine given was extract of hyoscyamus, in the form of a pill.

25th.—She has passed a good night; skin natural. During the morning she vomited a worm, and was very restless. She was calmed with a dose of paregoric.

26th.—The last night was passed comfortably upon the whole. Her spirits are good, the pulse 84, full and soft; the tongue clean, and appetite good; and no swelling of the abdomen. The wound uniting by first intention.

29th.—The wound perfectly united, except around the ligatures. All the sutures have been removed. During the night the patient turned upon her side without any inconvenience.

April 14th.—The ligatures came away to-day, without difficulty or pain. She can now sit up half the day, and walk into the adjoining room without assistance.

The left ovary was removed. The weight of the tumor was 37 pounds.

2. Mrs. F., of Clermont County, Ohio, æt. 46; menstruation had ceased in her fortieth year. Had received an injury in her left side seventeen years ago, and had felt the effects of it ever since. About three years since, she discovered a small tumor, about the size of her fist, floating loose in the lower part of the abdomen, which had gradually enlarged. At the time she visited me, April, 1853, I found it filling the whole cavity of the abdomen, and greatly distending it. Fluctuation was distinct in every part. After examining the case, and hearing her history of it, I told her the disease was ovarian dropsy, and that her only chance for a cure was an operation for its removal. Her general health up to this time had been good, and although she was greatly reduced in flesh, I told her I could see nothing in her case that would deter me from operating, if she wished it. I gave her directions for medicine and diet, to prepare her system in case she determined on an operation. After returning home, and consulting her friends, she sent me a note, stating that she wished the operation to be performed on the 17th of May, 1853. Accordingly, on that day, assisted by Dr. J. T. Bradford, of Augusta, Ky., and in the presence of a number of medical gentlemen and students, I performed the operation in the same manner as in the case of Mrs. B. There was but one slight adhesion to the omentum, which I divided by the knife. The patient did not come under the influence of chloroform well, and had to be held during the operation, which lasted seventeen minutes, including the dressing; but she was entirely unconscious of pain. Pulse, on placing her in bed, 84, and had undergone no change during the operation. Complained of being sick at the stomach, which soon passed off, and which I supposed to be the effect of the chloroform. Six hours after the operation she complained of severe pain in her stomach, which readily yielded to $\frac{1}{2}$ gr. sulph. morph. Her urine had to be drawn off by the catheter for three days. Bowels were moved on the third day by medicine. Catamenia made their appearance the second day, and continued for three days. The sutures were removed, two on the third day, and two on the fourth. The wound healed by the first intention; she was able to be on her feet the fourteenth day after the operation. No unpleasant symptoms occurred during the progress of the case. The ligatures came away on the twenty-seventh day after the operation. The tumor consisted of one large sac, to the inner surface of which were at-

tached the small ones, the largest of which would probably contain one-third of a pint. The walls of the sac were thin, and of a very even thickness throughout. The sac and its contents weighed thirty-one pounds. It was the left ovary that was removed. The length of the incision made was ten inches; very little blood was lost during the operation. She has since enjoyed uninterrupted good health, and is now more fleshy than ever before in her life.

Dr. Craig's Case.—The subject of this case was 26 years of age, the mother of one child. The operation was performed on the 22d April, 1854. Sulphuric ether having been previously administered, an explorative incision was made, three inches long, between the pubis and umbilicus; after carefully dissecting down to the peritoneum, this was opened, giving exit to about twenty ounces of serum, and leaving exposed the firm, irregular, silvery-looking tumor. The exploring finger could now detect adhesion of the tumor to the peritoneum in the left lumbar region; no other being found after a careful examination, it was decided to extend the incision to the pubis and umbilicus. At this time, about a pint of serum again escaped.

A large trocar was passed into one of the sacs of the tumor, but the contents were so thick that none passed through the canula. The incision in the abdomen was then enlarged, being made to extend to the pit of the stomach. The omentum was found extensively adherent to the superior surface of the tumor, and it was necessary to dissect it carefully loose. One-half of the tumor now protruded through the opening, and, being large and unwieldy, three of its largest sacs were opened, and their contents evacuated. The mass was then raised from its bed, when it was found to be adherent to about fifteen inches of the small intestine; this was dissected loose, and the tumor turned out through the incision, but left attached by its pedicle, which consisted of the left broad ligament and the Fallopian tube. At this juncture, the patient's pulse failed; her face assumed a deathlike aspect, and she gasped as if expiring. By the prompt application of stimulants and excitants, she was restored. Her dangerous symptoms were attributed to the removal of the pressure caused by the tumor, and the substitution of chloroform for the ether.

The tumor was now raised by Dr. Craig sufficiently to allow Dr. Pierce to pass a needle armed with a double ligature through the base of the pedicle; the threads were separated near the needle, tightly secured on each side of the pedicle, and the tumor removed. The ends of the ligatures were secured in the lower angle of the incision. No bleeding vessels were found on an examination, and the edges of the wound were brought together and maintained by means of the interrupted suture and adhesive plaster. Cold water dressings were applied, and a bandage placed round the abdomen, the patient put to bed, and forty drops of laudanum administered.

The time occupied by the operation was forty minutes. The intestines caused no trouble during the operation, lying quietly in the position in which they were found when the abdomen was laid open. Two hours after the operation, the pulse was 108, and feeble; the surface cool, and a sensation of sinking experienced. Warm gruel, with one-fourth grain sulph. morphia was prescribed. Six hours after, the patient was more comfortable; morphia repeated. In ten hours, pulse the same; tendency to sleep.

On the 23d, at 8 o'clock, a. m., patient comfortable; had several refreshing naps through the night; urine drawn off before day; pulse, 128; some appetite; slight hemorrhage from wound; dressings allowed to remain. At 12 o'clock, m., pulse 135; urine has been drawn off twice; abdomen tympanitic; has taken one-fourth grain sulph. morphia every six hours. At 6, p. m., pulse 140; abdomen still tympanitic; no pain; tongue coated and brown; slight nausea; prescribed light diet; continued morphia.

On the 24th, at 12 o'clock, m., pulse 100; no thirst or nausea; tongue beginning to clean; considerable appetite, slept well during the night; feels much better; dressings removed; wound healthy; adhesion progressing. From this time forward, no unfavorable symptoms occurred.

She continued, from this time, to improve; on the fifth week, one of the ligatures applied to the pedicle came away, and soon afterwards the other. Four months after the operation, her health appeared to be perfectly restored.

The tumor weighed eleven and three-fourths pounds after its fluid contents were discharged. It was what is called multilocular, and consisted of five large cysts and numerous smaller ones.

ART. 120.—*A case of Puncture of the Ovaries per vaginam.*

By Dr. SCHNETTER.

(*Verhandl. der Phys. Med. G. in Wurtzburg*, 1854; and *Med.-Chir. Rev.* Jan. 1855.)

This case is one of double ovarian dropsy, two cysts having been successively punctured in the way described.

CASE.—The patient was 25 years old; she had been delivered by the forceps, after a difficult labor, a year before she came under Dr. Schnetter's care; she had suffered from painful menstruation before pregnancy; and during pregnancy, from unusual distension of the abdomen, and difficult respiration. Fever and marked symptoms of peritonitis followed delivery. Examination revealed a tumor reaching a few inches above the umbilicus, occupying the right hypogastrium. The os uteri was in its normal position. To the right, somewhat behind it, and a little higher, a round and but slightly elastic tumor was felt. The uterus was longer than natural, and bent forwards towards the pubis. The continuity of the tumor in the abdomen with that in the pelvis was ascertained by counter pressure. A curved trocar was pushed into the tumor, when it projected behind the cervix uteri. At first, blood, then a few ounces of discolored pus followed. The trocar was driven further in, and by means of a curved knife passed through the canula, a further opening into the tumor made. A little bloody serum followed. A tube was adapted to the wound. Considerable fever and pain ensued. Some days after the operation, pressure being made on the tumor through the abdomen, about four or five pints of offensive, purulent, gelatinous matter, mixed with fibrinous shreds, escaped through the tube. The tumor disappeared. Discharge continued for some time. The patient's health did not improve. Four months after the first puncture, examined again; another tumor was found, projecting into the vagina on the left side. This cyst was punctured in like manner. Fever and alarming inflammatory symptoms followed. Six days afterwards an abundant discharge took place, gelatinous and fibrinous in character. The wound healed six months after the puncture. The patient eventually recovered her health; and eighteen months after operation there was no sign of relapse.

ART. 121.—*Ovarian Dropsy treated by Iodine injections.* By Mr. J. BAKER BROWN, Obstetric Surgeon to St. Mary's Hospital.

(*Lancet*, April 14, 1855.)

This case occurred in St. Mary's Hospital. In commenting upon it, Mr. Brown tells us that the iodine was taken up into the system, as evinced by the breath, and taste in the mouth. The urine, also, gave unequivocal evidence of its presence.

CASE.—Mary B.—, was admitted into the Boynton ward on the 9th of December, 1854. She stated she had had two children, and one miscarriage. She was 27 years of age at the birth of the first, and 29 at the birth of the second, child. From the latter period, she had noticed herself getting bigger around the waist, and troubled much by flatulency; she has been regular in menstruation all through her illness; she has no pain, but suffers considerable inconvenience from leucorrhœa. Mr. Brown examined her on the 12th of December, and found a well-marked ovarian cyst, apparently unilocular, and fluctuation distinct; the measurement around the abdomen was twenty-nine inches below the umbilicus, and twenty-eight above. He placed her under medical treatment, with a view to improve her general health, which was much impaired by the secretion of the fluid into the cystic cavity. On the 20th, Mr. Brown proceeded to empty the sac. First placing the patient in the horizontal position, he then introduced

a large trocar through the semilunar line, and evacuated twenty pints of a thin, turbid fluid, which was found to be strongly albuminous—almost solidified by the joint application of heat and nitric acid; it also contained abundant crystals of cholesterine. Mr. Brown then introduced a long, flexible catheter, and through it injected five ounces of the tincture of iodine (of the Edinburgh Pharmacopœia), which is about double the strength of ours. The pain experienced was very trifling, described by the patient as merely smarting. The wound having been closed by strapping, he applied appropriate pads, and one of his many-tailed bandages. The patient was then placed in bed, two grains of opium given, and four ounces of port wine ordered for the next twenty-four hours. In the evening, the patient felt very comfortable, and had no pain or tenderness in her abdomen, only a nasty taste in her mouth, like sea-weed; her breath smelt of iodine. The amount of urine voided for the first two days was more than the fluid taken, but afterwards less. Mr. Brown then ordered a diuretic mixture, and the effect on the secretions was, that the amount of fluid taken corresponded to the amount voided. There was now an apparent refilling of the cyst, but it proceeded very slowly; the patient's appetite was good; she slept well, and felt no pain.

January 20th, 1855.—There appeared about two quarts of fluid in the cyst, but it did not seem to increase, and the patient was decidedly better in health. Mr. Brown then ordered her to wear one of his ovarian bandages, to keep up gentle pressure over the whole abdomen, so as to give support to the whole parietes, and to arrest the refilling of the cyst. In a few days she left the hospital, considering herself much improved, and showing no external signs of the disease. Mr. Brown said he had lately examined her, and could find no increase of fluid, but great improvement in her general health; and she says she is in excellent health and spirits.

ART. 122.—*A new method of Lithotomy in Women.* By M. VALLET, Surgeon to the Hôtel-Dieu at Orleans.

(*Gaz. Hebdom.* Feb. 2 and 16, 1855.)

The peculiarity of this operation is, that the incision through the vesico-vaginal septum is made *transversely*, and that the incision is closed by suture immediately after the extraction of the stone. In making the incision, M. Vallet avails himself of the help afforded by a sound, of which half the thickness of the lower fifth is made to turn upon a central axis, so as to form a cross by being arranged transversely to the longitudinal axis of the instrument. This sound is opened after it is introduced into the bladder, and then, on making a little traction, the cross-piece is brought transversely across the outlet of the bladder, and thus a transverse projection is made in the vagina in the position in which the incision has to be made. This cross-piece, indeed, is the guide for the knife, and it is grooved for the purpose.

The ease with which it may be performed, and the diminished chance of urinary fistula, are said to be the advantages of this operation. It certainly answered well in two cases, which are related by the author in his present paper.

ART. 123.—*Case of Lithotomy by the lateral operation in the female.*

By DR. MORTON.

(*Glasgow Medical Journal*, Jan. 1855.)

In this very curious case the nucleus of the calculus, or calculi, was formed by the bones of a fœtus. Many years previously, the patient appears to have had an extra-uterine pregnancy, ending, as usual, in the escape of the fœtus into the abdominal cavity. There inflammation and ulceration is set up by the presence of the fœtus, and the wall of the bladder yielding to these destructive processes, the abortive mass is at length able to slip through the broken-down wall into the interior of the bladder. This appears to be the explanation. Dr. Morton also alludes to a similar case by M. Josephi, in which the bladder was opened

above the pubis, and the remains of a *foetus* extracted. The case is thus related:

CASE.—When in Ayrshire, in the end of last May (1854), I was requested to visit a Mrs. H—, a farmer's wife, the history of whose case, so far as it can now be ascertained, is as follows: At present about 47 years of age, she was married nearly twenty years ago, and about six years thereafter became pregnant, or at all events believed herself to be so. The menstrual discharge was arrested in November, 1839, and the usual symptoms of pregnancy manifested themselves; she had morning sickness, and the *mammæ* became swollen and tender. In the end of January, 1840, she had what was called a miscarriage, but, to use her own words, "not a proper miscarriage;" meaning thereby, that no *foetus* was observed to come away; there was only a discharge of bloody fluid *per vaginam*, with a few clots. She suffered much from severe pain and sickness, and a swelling about the size of a man's fist was observed in the hypogastric region, and to the left of the mesial line. This was the seat of violent pain, for which she was treated on the antiphlogistic plan, by leeches, blisters, &c., with partial relief.* The swelling still felt painful, especially when touched or handled in any way. The breasts continued enlarged and tender, occasionally more so than at other times, till near the Whitsunday following. In August of the same year, the menses resumed their flow.

Since the supposed abortion in January she has never been well, and has always suffered more or less pain in the seat of swelling; and both the pain and swelling had frequent alternations of increase and diminution. Though her catamenia have been regular since the August mentioned, yet her stomach has been irritable, her bowels ill to regulate, and, consequently, her general health indifferent. About three years ago, to the hypogastric pain were added gravel pains of some severity; and in a few months thereafter, pieces of bone, incrustated with calculous matter, occasionally found their way out *per urethrum*, and during the last two years many such have either been passed in that way, or picked out of the orifice of the urethra, by a druggist who is on terms of intimacy with the family. Some of these have been preserved, and will afterwards be referred to. She seems never to have experienced any annoyance from irritation of the rectum, notwithstanding its proximity to the causes of irritation.

At the time of my visit, I was on my way into town, had very little time at my command, no instruments with me for sounding, and was unable to learn anything of the state of the bladder by vaginal examination, which could not be satisfactorily made, owing to the severe pain complained of, even on touching parts which had already been so long the seat of severe and protracted irritation. She was considerably emaciated, and had the aspect of a person who had suffered much. She felt that there were still other substances in the bladder, supposed to be bones, and said that they seemed to be rubbing against each other. A specimen of her urine having been procured and examined, it was found to be acid and healthy, with the exception of a very slight mucous sediment, doubtless due to the vesical irritation. She was then advised to come to town for treatment.

On the 18th of July, this person and her husband came to the city, and on the following day, with the kind and able assistance and advice of Dr. Andrew Buchanan, after the inhalation of chloroform, a careful examination of the bladder was made, and, by the sound, it was readily ascertained that there was at least one foreign body within it; our supposition was, that there were several, and that probably these were bones, although we contemplated the possibility that there were also calculi. Attention was also given to the state of the uterus, which, by digital examination felt small: the os was closed and smoothly rounded, with no irregularity of surface, and presenting no indication of ever having been disturbed, as in pregnancy. An attempt was made to introduce a uterine sound, but it was evident this could not be easily effected, and it was not thought justifiable to employ force. There seemed to be no intimate connection of the uterus with the bladder. The patient was recommended

* A very intelligent country practitioner, who then visited this patient, is since dead, so that I am unable to say whether or not he suspected the nature of the case. He seems to have given no hint of it to the patient or her relatives.

to submit to operation, and readily consented. My intention was to adopt the plan lately proposed, and in several cases already followed, by Dr. Buchanan. This may be called an adaptation of the lateral operation of lithotomy in the male to the female. It consists in cutting down upon a director or grooved staff held by an assistant in the urethra, the incision being made with a common scalpel on the left side of the vulva, beginning opposite the clitoris, and cutting obliquely across the left labium minus, in a line with the ramus of the ischium. When the groove in the director is felt by the finger in the wound, a straight bistoury is then passed into the groove, run along into the vesical mouth, and the incision enlarged by cutting outwards and towards the tuberosity of the ischium, care being taken not to penetrate the vaginal wall; after which the finger, guided by the director, easily reaches the interior of the bladder.

On the 20th of July, near 1 p. m., assisted by Drs. Buchanan and Pagan, and Mr. A. Buchanan, I proceeded to perform the operation now described. The patient having been put under the influence of chloroform, and then placed in the usual position for lithotomy, the director introduced, and indications of the presence of one or more foreign bodies plainly perceived by all, the incision was made, the groove felt, the bistoury carried along towards the bladder, and then outwards towards the ischial tuberosity, and the finger without difficulty introduced into the bladder. The director was then withdrawn, two stones were felt, and first the one and then the other extracted, the first being the larger of the two, and requiring gentle traction. On again introducing the finger, a third stone was felt, and after some difficulty and delay in obtaining a proper hold, it was also extracted, and proved to be of a size intermediate to the other two. A bone was then felt in the bladder, adherent to the vesical wall, both ends of it being imbedded in the left side of the viscus; and by keeping the finger steadily fixed upon it, and thus guiding a long and slender pair of forceps to its seat, a hold was at once obtained, and it was extracted with ease. This proved to be the middle portion of a femur. On a careful examination of the interior of the bladder by the finger, we satisfied ourselves that nothing further remained requiring removal.

After the operation, which was completed in about ten minutes, the patient had some nervous trembling, and felt somewhat faintish for two or three hours, when she rallied completely, and after a very slight opiate draught, passed a comfortable night. She had slight smarting at the wound from the urine passing over the raw surface; but, with this exception, made little complaint, and always averred that the slight uneasiness she now felt was not to be compared to the constantly harassing pain she had formerly suffered in the region of the bladder. Three or four days after the operation, she passed her urine chiefly *per viam naturalem*, and by the end of a week entirely so, and then was able to sit up with comfort, and to take some nourishing food with relish—a circumstance somewhat new to her. Accustomed as she had been to the open air of the country, the confinement to the house in town, about nine days after the operation, induced a slight bilious attack, which was speedily relieved by a blue pill, followed by a dose of castor oil.

On the following Tuesday (August 1st), twelve days after the operation, she was able to walk out, and was conveyed home, a distance of more than forty miles, by rail. Since that time I have had several notes from her husband, who, while expressing his own and her gratitude for what had been done for her, states that she continues well, enjoying more comfort and freedom from pain than she has done for many years. Her appetite and general health are said to be good; she is able to attend to her usual avocations, but still feels a very slight degree of pain in making water, which she can retain for several hours.

The stones extracted were light, and more bulky than weighty, and were found to weigh respectively 160, 100, and 40 grains. In consistence they were rather soft and friable. The bones which the patient had passed *per urethram*, and the one extracted during the operation, were submitted to Dr. Allen Thomson, to whose kind attention I am indebted for the following classification of them:

LIST OF FRAGMENTS OF BONES, ETC.

1. Fragment of parietal bone.
2. Several small fragments of tabular bones.
3. Right great wing of the sphenoid; left lesser wing of do.; body of do.
4. Basilar process of the occipital; right condyloid part of do.; part of left condyloid portion of do.
5. Two fragments, probably of lower maxilla.
6. Fragment of right clavicle; nearly the whole left clavicle.
7. Small fragment of scapula.
8. First left rib; second right rib; a right rib near the middle.
9. Middle part of the shaft of right humerus; do. of left side.
10. Left ulna.
11. Right ilium.
12. Middle part of the shaft of the right femur; an imbedded fragment, probably of the left femur.
13. Some other small fragments not determined.

These fragments appear all to belong to the same skeleton. It is not easy to pronounce decidedly upon the age of the fœtus to which they belonged, on account of the broken condition of most of them. I am inclined to think they must have belonged to a fœtus of about six months.

A. T.

With the above opinion, Dr. Pagan has expressed his concurrence. The number of bones and fragments in my possession is about thirty, besides one in each calculus as a nucleus, and it is believed that several may have been lost.

SECTION OF CALCULI.—To Dr. William Aitken I am indebted for a careful section of the three calculi; and, as anticipated, each was found to have a bony nucleus. The largest contains a tibia, in a very good state of preservation, and lying in the long diameter of the calculus. The second in size contains some flat bone, probably a portion of the frontal, or some other cranial bone; and the smallest contains a bony structure, presenting large cellular divisions, most probably part of one of the maxillary bones. To make certain of some of these points, destruction of the calculi would be necessary. No distinct marks of attrition were observable on any of these calculi.

Having myself ascertained the presence of a phosphatic salt, and of carbonate of lime, in one of the calculi, I became desirous of a more accurate analysis, and accordingly handed a small portion of the fragments of another of the stones, separated while it was being cut by the saw, to Dr. Robert McGregor, who favored me with the following note, containing the results of his experiments upon it:

"1. The calculous matter which you handed to me the other day for examination, dissolves readily in muriatic acid, with effervescence, and is precipitable by caustic potash, in the form of a cloud, which, under the microscope, is amorphous. 2. It gives off ammoniacal vapors on the addition of potash, or the application of heat. 3. It fuses before the blow-pipe into a pearly globule. 4. It is fusible calculous matter, with a trace of carbonate of lime."

It has been noticed by authors, that the disposition to the formation of phosphatic concretions is very rarely original. In ordinary cases, they occur subsequently to the formation of calculi of some other kind. A source of irritation seems requisite to give origin to that state of the system, entitled the phosphatic diathesis; and usually this is found in the presence of a calculus of antecedent formation. An example of irritation from a different and rare cause, leading to a similar result, is presented by the case before us—a proof that irritation is a principal link in the chain of causation, and that the resulting deposit is not in any degree owing to the chemical constitution of antecedent calculi, the usual sources of such irritation.

(C) CONCERNING DISEASES OF CHILDREN.

ART. 124.—*Case of Small-pox in utero.* By M. BLOT.

(Gaz. Méd. de Paris, Nov. 25, 1854.)

This case is related in the Report of the Proceedings of the Parisian "Société de Biologie."

CASE.—The mother of the little patient, previously in good health, and six months advanced in her second pregnancy, was attacked with small-pox on the 17th of July, 1854. She had not been vaccinated, but the attack was not severe, and she recovered without any secondary fever. During her illness, the movements of the child were more continuous than they were before, but not so energetic; during her convalescence the same movements became more and more feeble, until they ceased altogether, and the child was felt to fall towards the side on which the mother happened to lay. Two days after this cessation, labor came on unexpectedly, and the mother removed to the "Clinique d'Accouchements," where she was presently delivered of a male fetus of the six and a half or seventh month, covered with pustules of small-pox. This fetus presented unequivocal evidence of having been recently alive, and there was every reason to believe that it had had small-pox at same time as its mother, and that it had died from this cause.

ART. 125.—*Spontaneous Gangrene in a child eight months old.*

By Mr. CHARLES SIDLEY, of Edinburgh.

(Edin. Medical and Surgical Journal, Jan. 1855.)

This very remarkable and singular case is recorded in the "Casebook" of the journal cited above.

CASE.—The child was passing through a second attack of whooping-cough, and the disease presented no unfavorable symptom till, on the 22d May, 1853, there was observed to be considerable feverishness, with bilious diarrhœa. The breathing was unaffected. In the evening of the 23d, a reddish ring appeared around the left thumb. A few hours afterwards, this part became quite black, and the dark color soon spread over the whole hand. The left half of the scalp, and the corresponding ear at the same time assumed a purplish dark color, which, during the night, spread over the entire scalp. In the morning, on examination, the scalp, both cheeks, and both hands were gangrenous; notwithstanding which extensive disease, the child remained sensible, and continued to suck until twelve hours after the first appearance of the disease, when it expired.

ART. 126.—*On the Anæmia of Infancy.* By Professor MAUTHNER, of Vienna.

(Journ. für Kinderkr., July and Aug. 1854; Medical Times and Gazette, Nov. 4, 1854.)

The author remarks that, for many years, the practice of venesection has been on the decline, and he quotes the words of Professor Richter, of Dresden: "Poverty of blood is, next to tuberculosis and cancer, the increasing evil of our time, which will bring down a gradual deterioration of the race, and therefore merits our most earnest consideration." According to Valentiner, most neuralgic affections are caused by anæmia; and, according to Trousseau, chlorosis now prevails in the general pathology of the female. An anæmic mother will produce anæmic children; anæmia may be congenital, or acquired from too rapid development and quick growth. It is difficult to believe in the disease as congenital, the quantity of blood in the infant's tissues being normal. Valentin has shown that the amount of blood in the newly born is proportionately greater than in later life; for a child of five to six pounds has nearly two pounds of blood; while at the age of thirty it barely attains one fifth of the weight of the body.

But in infancy, as in old age, the watery constituent is more considerable than in middle life.

The cause of this congenital anæmia lies in the general corporeal weakness of the mother, whence also it comes that there are so many abortions and early deaths. Want of proper food during pregnancy exerts a potent influence, too commonly at work among the lower orders, oppressed with want and care; and the younger children are more subject to the disease, because the exhausted mother loses in time the power of nourishing her children by her own milk, and the father has not the means of procuring a wet nurse. A child born of a mother who has suckled another infant during her pregnancy generally suffers from poverty of blood. Losses of blood, or profuse mucous discharges, by injuring the mother's health, are to be regarded as prejudicial to healthy fetal development. An aged or diseased father commonly begets an anæmic child. Congenital syphilis must also be regarded as a cause. The morbid change in the blood being unknown, we must be content with the term "anæmia syphilitica." It is not always recognized, but it is of most momentous importance as regards the rising generation. Should an infant affected with this disease be vaccinated, a peculiar glandular disease is apt to ensue from this second poisoning of the blood. The author proceeds to enumerate the symptoms of congenital syphilis. The child suffers from excoriations about the mouth and anus, &c.; from roseola, pemphigus, eczema, psoriasis, or from a peculiar tenuity, smoothness, and transparency of the epidermis. They do not possess power to resist external influences; they are long in teething; tuberculosis is apt to ensue in the course of time.

The anæmia of development comes on when growth at any period is very quick. Hence we have the anæmia of dentition, the anæmia of puberty, or chlorosis.

From experiments upon animals, Nasse has shown that animal diet renders the blood more coagulable than vegetable diet, and increases the number of the blood-corpuscles. From sugar and starch-meal there is formed a glutinous lymph plasma, but no corpuscles. A purely vegetable diet, therefore, is not suited for infancy; the more so from the anatomical fact, that the cæcum, that part of the intestinal canal where vegetable digestion goes on, is but imperfectly developed at that period. Anæmic children are very apt to suffer from inflammations. Nature endeavors to excite a reaction from this depressing influence; and stasis of the blood commonly ensues in organs unfitted for active circulation; but the exudations tend only yet more to impoverish the blood; and venesections materially increase the evil. One of the evils of infantile anæmia is hemorrhage from the congested and delicate vessels of the large intestine. This occurrence is frequently overlooked, or confounded with other disorders, such as convulsions. The author has verified the fact by dissection.

When the plastic power of the organism, says Canstatt, is exhausted by rapid natural and morbid evolutions, then tuberculosis suddenly forms, and the latent material begins to be deposited upon any excitement in the different viscera. Thus, it is to be feared, during the blood-impoverishment of dentition; and it attacks especially children subject to perspirations, and to excited pulsations of the heart.

The practitioner should never forget, in considering the diseases of childhood, that sudden attacks, even death itself, may occur just as easily in children from anæmia as from hyperæmia. Thus, cases of convulsions and other attacks, once regarded as inflammatory, require, in the present day, more careful examination and more accurate diagnosis.

ART. 127.—*On infantile Paralysis.* By Mr. WM. ADAMS, Assistant-Surgeon to the Orthopædic Hospital.

(*Assoc. Med. Journal*, April 6, 1855.)

Whether paralysis of particular muscles or limbs, independent of traumatic lesion, is ever congenital, Mr. Adams considers to be at least doubtful. The cases related of limbs remaining flaccid and useless in infants born asphyxiated,

after difficult and instrumental labors, and of facial paralysis, usually of one side, and sometimes accompanied with loss of power in the corresponding arm, &c., which had in some instances been satisfactorily traced to traumatic lesion—cannot be admitted as examples of the affection described. Infantile paralysis usually occurs between the ages of six and eighteen months, generally during difficult dentition, and often preceded by fits or convulsions. It may, however, occur at earlier, or at later periods. In one of Mr. Adams's cases, it occurred at the age of five years; and both arms, as well as both legs, were paralyzed. It is said frequently to happen without any convulsive disorder, and when the children are in robust health. Mr. Adams, however, considers that in many of these cases the children had fits, which passed away unnoticed in the night; and careful inquiry had convinced him that in most cases the children were at the time suffering from a slight febrile condition. Many children, apparently in good health, became heated and feverish during the night; the skin, especially of the face, being hot and burning, and the head freely perspiring. Paralysis in children may result from intestinal irritation caused by worms, indigestible food, &c. The cause may be either centric or eccentric irritation. It not infrequently follows marked febrile disorders, especially measles and whooping-cough. It is the author's opinion that where many muscles or entire limbs are affected, and where the paralysis is persistent, it depends upon structural lesion of the nervous centres, brain, or spinal cord; that in similar cases, in which the paralysis is transient, it depends upon congestion of the nervous centres, sometimes accompanied with effusion, which afterwards becomes absorbed; and that where single muscles, or a group of associated muscles, are affected, it depends upon some local failure of nutrition in the nerves supplying the muscles, under a general, though perhaps slight, febrile condition. M. Bouchut describes this affection under the title of "myogenic or essential paralysis" ("Practical Treatise on the Diseases of Children," translated by Mr. P. H. Bird); and admits, as a cause, lesion of the nervous centres and cords only in those cases which succeed febrile convulsions. The other cases he groups in two classes, viz., those accompanied with pain in the affected limb, and those following convulsions without febrile excitement; and in these he considers the cause to be primarily and essentially an alteration of the elementary tissue of the substance of the muscles. The nature of the affection in these cases he regards as "entirely rheumatic," and traces it as a frequent result of exposure to cold. Mr. Adams has not seen any cases accompanied with pain; but, upon the ground of deficient evidence, he doubts the rheumatic character of the affection under any circumstances, and regards it as probable that the children who, in restless nights, throw off the bed-clothes, are frequently suffering from febrile or eccentric irritation. No evidence is given of alteration in the elementary structure of the muscles in the early stages; and Mr. Adams considers the myogenic theory to be advanced without sufficient evidence. M. Bouchut states that the development of the paralysis is usually slow. In the author's experience, it had always been sudden; and it is considered that, in the cases of supposed slow development, the consecutive phenomena—contraction and atrophy—had taken place. In these cases, the limb is often said to get weaker; when it occurs in the leg, the lameness increases, but this is due to the super-vention of contraction, and not to any increase of the paralytic affection, which, indeed, is not infrequently improving. M. Bouchut observes that, "whether at the beginning or at the end of the myogenic paralysis, sensation remains quite perfect." In this the author entirely concurs. Mr. Adams has also noticed that there does not appear to be any disposition in the paralyzed muscles to become rigid, as in cases of adult paralysis recently noticed more particularly by Dr. Todd. The muscles either remain flaccid throughout life, or, by the spontaneous disappearance of the paralysis, they are restored to a healthy condition; or complete recovery is arrested, and the muscles remain partially paralyzed through life. This latter is believed to be the most frequent termination; the complete recovery second; and the persistent flaccid condition third, in relative frequency. The paralysis most commonly affects some of the muscles of one leg; very frequently the leg and arm of the same side; occasionally both legs; and very rarely both legs and both arms. When single muscles are affected,

the most frequent to suffer are—1, the extensor longus digitorum of the toes; 2, the tibialis anticus; 3, the deltoid; 4, the sterno-mastoid. When particular groups of muscles are affected, the most frequent to suffer are—1, those on the anterior part of the leg, forming the extensors of the toes and flexors of the foot; 2, the extensors and supinators of the hand, always together; 3, the extensors of the leg, and with them generally the muscles of the foot in the first class. At the time of seizure, the author is unable to say whether any other muscles were affected; but if so, they completely recovered, as in the last stage the cases presented well-marked examples of paralysis of single muscles or groups of muscles. Sir B. Brodie lately mentioned to the author a case brought to him in which the muscles of deglutition were paralyzed in a child. The attempts to swallow were very painful to witness. He did not know the result, but death from starvation probably took place. In the Royal Orthopædic Hospital, where these cases apply in considerable numbers, no case had been seen in which the muscles of the hip-joint were involved. Some patients, in whom both legs were affected, the rectus and other muscles of the thighs, as well as those of the legs being paralyzed, have never walked at all; but the existence of power in the muscles of the hip-joints enables us to make these patients walk, by mechanically fixing the knee and ankle-joints, with considerable freedom. This affection exhibits a strong tendency towards spontaneous cure. In some cases, the paralysis completely disappears, even when entire limbs are involved; but in reference to severe cases, Mr. Adams believes with Sir B. Brodie, that unless recovery takes place within a few months, the paralysis is generally persistent through life. In slight and moderately severe cases, the rule is, that either complete recovery or very great improvement takes place; and this frequently several years after the seizure. Numerous cases are seen at the Orthopædic Hospital in all stages of spontaneous recovery. The second stage is marked by deformity, produced by adapted atrophy of certain muscles, determined by paralysis of the opponent muscles and position of the part, as seen in the commonest form—elevation of the heel. The author advises the removal of the contraction in the lower extremities by division of the tendons, whenever it interferes with the motions of the joints necessary to progression and the erect position. Loss of power can be subsequently compensated for to a great extent by mechanical means, the joints being either rendered available in progression, or fixed. Infantile paralysis lays the foundation of a very large proportion of all the non-congenital deformities, itself being frequently only a transient condition. If the mode of production of these deformities were rightly understood, their prevention would be easy. Passive muscular exercises, according to the circumstances of the case, and properly adapted mechanical supports, are the preventive measures indicated. In the medical treatment, gentle mercurials for a few months after the seizure are recommended, if not injurious to the general health, but, beyond this period, any internal remedies, except those calculated to improve the general health, are of little use. Febrile irritation must be allayed; and in difficult dentition the gums may be lanced. Although this cannot remove the mischief, it may contribute to this end, and diminish its effects. Mr. Adams has not seen benefit from blisters or other counter-irritants, though he had used them. He prefers shampooing, galvanism, warm clothing, sea-bathing, and passive exercises, as likely to aid the vigorous and frequently successful efforts made by nature. The hæmospastic apparatus invented by Dr. Junod was very useful in maintaining a natural temperature in the paralytic extremities. To some extent the apparatus had been useful in keeping a good supply of blood in the muscles, and preventing atrophy.

ART. 128.—*Prolapsus Ani treated by Strychnia and the actual Caustery.*

By Mr. ATHOL JOHNSON.

(*Medical Times and Gazette*, Nov. 18, 1854.)

Mr. Johnson relates two cases which were treated by him in this manner at the hospital for sick children. The plan was originally proposed by M. Duchaussey (v. "Abstract," Vol. XIX.).

CASE 1.—Isabella Addington, æt. 2 years, a thin child, of strumous aspect, was admitted, May 6, with the rectum protruding about an inch, forming a large, solid, red mass, with the aperture of the bowel in the centre, the sphincter being much dilated around its base. The child had been subject to prolapsus for some months, but for the last fortnight the bowel is said to have been down almost constantly, the mother being unable or afraid to return it.

By a little gentle manipulation, the gut was replaced; but the sphincter remained relaxed, so that two fingers could easily be introduced; and on the child beginning to cry, the prolapsus recurred immediately. The intestine was again returned, and this time kept up by means of a piece of gutta percha enveloped in lint and secured by a bandage. Mild laxatives, along with tonics, were administered, and a nourishing diet given. The bowel ceased to come down. The sphincter partially regained its tone; and the child was discharged May 16th.

On the 3d of June she was again admitted. She had evidently been much neglected. The bowel was now protruding about an inch, and had been allowed to remain so for some days. The sphincter was much relaxed. It was now determined to try to produce a more permanent contraction of the muscle. Accordingly, a small blister having been applied to the cleft between the nates, $\frac{1}{10}$ th grain of strychnia was applied. No convulsive twitches were noticed; but two hours afterwards, when a motion took place, the bowel did not descend.

On the following day a fresh prolapsus took place, but not to the same extent as before. On the fourth day, $\frac{1}{10}$ th grain of strychnia was applied to the side of the anus, the cuticle having previously been removed. Pain was complained of, and the child seemed uneasy, but no muscular contractions were noticed.

Five days afterwards, the bowel still protruding a little after having a motion, $\frac{1}{10}$ th grain of strychnia was again applied in the same situation. From this time no further descent of the rectum occurred; the sphincter was more firmly contracted; and on June 30th the patient was discharged, and has not since applied for relief.

In this case the affection was not very severe, and, had the child received a fair amount of attention at home, it is probable that no surgical measures need have been had recourse to; as it was, however, the application of the strychnia certainly seemed attended with benefit; but some rather strong objections attended its use, which will be alluded to at the end of the next case.

CASE 2.—Julia Seymour, æt. 4, was admitted, July 2d, with the rectum protruding quite two inches; the mucous surface being inflamed, and coated with a muco-purulent discharge. There was said to be great pain on any motion passing, so that her friends had allowed her bowels to be much confined, from their dread of ever giving her any opening medicine. She had been subject to prolapsus for about six months, and for the last six weeks the bowel has scarcely ever been in its natural position. After a little manipulation, the gut was replaced; the sphincter, however, remained much relaxed, allowing a couple of fingers to be introduced through the anus, without any resistance.

Under the influence of rest and laxatives, the mucous membrane became more healthy; but the sphincter not regaining its tone, and the bowel constantly descending, on the 6th of July $\frac{1}{10}$ th grain of strychnia was applied over the tip of the coccyx, the cuticle having been previously removed. On the 7th, the strychnia was repeated, and again on the 8th. The application of the strychnia produced a good deal of "twitching" about the sphincter, which lasted for upwards of half an hour, and, on one occasion, rather severe convulsive action of the muscles of the lower extremities.

Some, but no very decided benefit followed the use of the strychnia, and its application was attended with so much inconvenience as to cause its discontinuance.

On the 26th of July, the rectum still protruding to a considerable extent every time of a motion being passed, and the aperture of the anus being still in a relaxed state, the patient was rendered insensible by chloroform, and the actual cautery applied in four places, at the junction of the skin with the mucous membrane. The first time of having a motion after the operation the bowel descended slightly, but for some days afterwards it did not come down at all,

and the anus remained in a much more contracted state. On the 23d of August, however, there being a little return of the prolapsus, the cauterization was again applied, in one spot to the side of the anus.

There was again a slight repetition of the affection on the occasion of administering an injection to bring away some thread worms. On the 29th of September, there having been no prolapsus for some time, she was discharged as cured.

Appended to these cases are the following remarks: "In the ordinary run of cases of prolapsus ani among the children who apply at the hospital, attention to the state of the bowels, tonics, and astringent injections are usually sufficient. In those children, however, who have been neglected, and in whom the rectum has been suffered to remain down for a considerable time, the aperture of the anus becomes much dilated, the sphincter appears to have lost its tone, and the above-mentioned treatment fails to effect a cure. Is the local application of strychnia of service in these cases? In the comparatively mild forms of the disease, I think that it is of some use, but in the more aggravated cases it cannot be depended upon. Practically, too, I found considerable objections to its use in children. It is necessary first to remove the cuticle, and then to apply the strychnia several times. This proceeding, however, is attended with a certain amount of pain, and it becomes each time more and more difficult to keep the little patient sufficiently quiet to allow of the strychnia being properly administered; either more is used than is desired or even safe, or else, perhaps, in the struggle some is lost, and a sufficient quantity is not employed. Moreover, in practice it is not desirable, if it can be avoided, to have to repeat any operation of this kind frequently in young children; the little patient becomes fretful, impatient, and suspicious, the struggles are violent, and almost as much harm is done as good effected.

"A more efficacious, as well as a more convenient measure, in these severe forms, would seem to be the application of the actual cautery, in the mode suggested by M. Guersent, of the Hospital for Children at Paris. This operation can be performed easily under chloroform; is, of course, unattended with suffering; and seldom requires to be repeated.

"The iron, having a button-shaped point, well heated, is applied to the junction of the skin with the mucous membrane at the verge of the anus, usually in four separate points, to such an extent as to make a pretty decided eschar. It may be mentioned, that even when the patient was insensible, the bowel generally descends with some force during the operation, so that it is necessary to be prepared with a piece of sponge or lint to protect the protruding gut while the iron is being applied to other points. Scarcely any pain is complained of afterwards, the child being ready to play and laugh almost as soon as it recovers from the effects of the chloroform. Simple dressings may be applied to the resulting sores, which usually heal without much trouble or difficulty.

"With regard to the *modus operandi* of this operation, I am inclined to think, from the immediate benefit produced, that it acts, to some extent, at any rate, by the powerful stimulus to the sphincter muscle, increasing its tone, rather than by the resistance afforded to the descent of the gut by the contraction of any cicatrix which may subsequently be produced.

"From the little experience I have already had, I certainly prefer this operation to the application of strychnia in those cases of prolapsus ani in which any surgical measures are required."

ART. 129.—*Case of Anus opening into the Vagina, successfully treated by Amussat's operation.* By Dr. HARGRAVE, Professor of Surgery to the College of Surgeons in Ireland, &c.

(*Dublin Medical Press*, Dec. 27, 1854.)

This case was read on a recent occasion before the Surgical Society of Ireland.

Mary Anne W——, æt. 12 months, admitted into the City of Dublin Hospital, October, 1854, presented the following malformations: no appearance of anus,

the ano-perineal region being one, and slightly convex externally. The rectum, by means of a small orifice, communicated with the posterior portion of the vagina, through which narrow opening the fæces were discharged in vermicular coils since the child's birth. This opening was about three lines distant from the fourchette, and admitted a No. 4 bougie with a little difficulty into the rectum, thence it could be passed up into the sigmoid flexure of the colon; when withdrawn, it was covered with fæces. This malformation exhibited the characters of the cloaca of the bird.

The child was pallid, limbs thin and flabby, and from birth was always supported by the breast milk, as her mother was apprehensive that any other food would have disagreed with her bowels, and render them constipated, which, when it occurred, was more distressing to the child than the opposite state.

When the ano-perineal region was carefully inspected during the nismus made by the child to empty the rectum, the outline of the intestine was visible, presenting a course slightly convex to the integuments. It was this appearance which decided me on the selection of the linear incision for the operation, which I shall again refer to in the details of the case.

Two different attempts had been made to remedy this deformity by operation. Both failed, the line of the incisions being still evident in the perineum.

Operation, October 6th.—The child was placed in the position as for lithotomy, without the hands and feet being secured to each other by ligatures. Equal parts of chloroform and rectified spirits of wine were inhaled, she soon felt their influence. I then made a free incision in the mesial line of the perineum one inch in extent, terminating a little anterior to the coccyx, dividing the integuments, and exposing an abundant quantity of firm adipose tissue. A curved aneurismal needle was introduced into the vagina, and passed from it into the rectum, which assisted in making it prominent. After a tedious and deep dissection, the rectum was exposed at fully an inch and a half distance from the surface; then with my finger and the handle of the scalpel, I teased out the cellular membrane, which was very firm and dense, for the purpose of freeing the gut from its connections to enable me to draw it down towards the surface of the wound. In this step of the operation I did not succeed to my satisfaction, as the rectum was too adherent, so that if I persevered in the attempt, it might have been lacerated. The rectum was now freely opened on its posterior and *left aspect*, giving exit to fæces. A ligature was next passed through the gut on each side corresponding to the tubera ischii, and through the integuments, which secured them and the rectum to each other.

The opening into the intestine freely admitted my little finger.

The operation was tedious for the following reasons:

1st. The frequent discharge of fæces through the vagina, caused by the irritation of the incisions, which obscured the parts that were being incised, and more so when the rectum was opened.

2d. The depth at which the rectum was from the surface, and presenting no cul de sac, compelled me to proceed cautiously in the dissection. Little blood was lost during the operation, though two vessels required to be tied; one rather large in so young a subject.

The dressing of the parts consisted of a piece of prepared sponge, covered with well-oiled lint in form of a small rectum bougie, a compress, and a T bandage.

The little patient seemed not much exhausted by this tedious operation, and when applied to the breast, sucked most healthily, and even ravenously.

Three P.M.—Passed the time since the operation dozing with some sleep, and was easily roused; the temperature of the skin slightly raised; no evacuation from the rectum, which was not expected, as during the operation copious ones took place. She was given five drops of the solution of Mur. Morph. in one drachm of syrup.

7th.—Good night; her mother states that she sucks well, and better than for some time previous; bowels discharging freely through the artificial opening.

Six P.M.—Passed a very restless day, and was very cross, forcing out the tampon from the rectum and the wound, which showed signs of incipient suppuration. A square fold of linen, well oiled, was substituted for the tampon, and

introduced by the finger through the wound high into the rectum, and ten drops of the Sol. Mur. Morph. given.

9th.—Fæces passing freely through the wound, which at the edges is beginning to assume a granulating appearance; appetite good, but is suffering from teething. Gums to be lanced, and to have ten drops of the Sol. Mur. Morph. The wound was dressed with the linen tents.

10th.—Wound suppurating; the fæces passing through it, and no urine, as she micturated freely when being dressed, all of it was discharged through the natural passage, being ejected with great force. She was ordered to have bread jelly for her diet, to be given sparingly, and to continue the Mur. Morph. drops.

12th.—Report favorable, but being purged, was ordered the compound chalk powder, chalk with opium, and Dover's powder every fourth hour; 12 grs., 6 grs., 2 grs. in p. sex. i. 4tis horis.

14th.—Bowels better; powders continued; wound less in size near the vagina. A No. 4 bougie was introduced into the rectum, when a free discharge of fæces followed. A small cylindrical piece of prepared sponge was passed into the rectum, and the wound dressed with a compress and the T bandage.

16th.—The anterior part of the wound uniting; the posterior part of it assuming a circular and cylindrical form; bowels again relaxed, perhaps due to teething. Ordered gr. iv., Ext. Hæmatox. c. gut. ij. Vin. Ipec., in cinnamon water, bis in die.

25th.—Going on most favorably; inner surface of the wound cicatrizing.

31st.—Since last report, the fæculent matter has passed twice partly through the vagina; general health much improved. This day I introduced into the rectum a piece of No. 6 catheter, secured to a disk of gutta percha, when some fluid fæces were instantly discharged through it, proving the presence and action of a sphincter muscle to the gut. The length of the catheter was two inches.

Nov. 2d.—When being dressed this day, the disk of the piece of catheter was found detached, but no evidence of the latter. A bougie was passed fully six inches into the rectum to sound for the catheter, but it could not be detected. A bougie of gutta percha with a disk of the same material was now passed into the rectum, and confined by means of adhesive plaster.

3d.—The mother, when dressing the child this morning, found the piece of catheter bougie in her clothes, which I had introduced forty-eight hours previously; no inconvenience followed this retention, which to me was an additional proof of the action of a sphincter muscle.

13th.—Her mother states that she passes all the fæces through the artificial opening; the child much improved in her general health.

16th.—Discharged cured, being six weeks under treatment.

REPORTS

ON THE

PROGRESS OF THE MEDICAL SCIENCES.

January—June, 1855.

THE intention of the following Reports is to pass in review the principal additions to each department of Medical Science, which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful, will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report, to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and disease.

I.

REPORT ON PRACTICAL MEDICINE, ETC.

On the Mode of Communication of Cholera. 2d edit, illustrated with maps. By JOHN SNOW, M.D., L.R.C.P., President of the Medical Society of London. 8vo., London, Churchill, pp. 263, 1855.

DR. SNOW agrees with those who consider that cholera is communicable from person to person, and he relates and quotes a number of instances, which (he considers) leave no room for doubt on this point. He then says—

"Besides the facts above mentioned, which prove that cholera is communicated from person to person, there are others which show, first, that being present in the same room with a patient, and attending on him, do not necessarily expose a person to the morbid poison; and, secondly, that it is not always requisite that a person should be very near a cholera patient in order to take the disease, as the morbid matter producing it may be transmitted to a distance. It used to be generally assumed, that if cholera were a catching or communicable disease, it must spread by effluvia given off from the patient into the surrounding air, and inhaled by others into the lungs. This assumption led to very conflicting opinions respecting the disease. A little reflection shows, however, that we have no right thus to limit the way in which a disease may be propagated, for the communicable diseases of which we have a correct knowledge spread in very different manners. The itch, and certain other diseases of the skin, are propagated in one way; syphilis, in another way; and intestinal worms in a third way, quite distinct from either of the others."

The author is of opinion, that the pathology of cholera indicates the manner in which it is communicated. He considers that, if the blood were poisoned in the first instance, the disease would be ushered in by fever or other general symptoms, whilst, on the contrary, he says, that the affection of the alimentary canal precedes the other symptoms, and is, in fact, the cause of them. He says, "in a few cases, indeed, there are dizziness, faintness, and a feeling of sinking, before discharges from the stomach or bowels actually take place; but there can be no doubt, that these symptoms depend on the exudation from the mucous membrane, which is soon afterwards copiously evacuated. This is only what occurs in certain cases of hemorrhage into the alimentary canal, where all the symptoms of loss of blood are present before that fluid shows itself in the evacuations." He quotes the analysis of the blood of cholera patients, by Drs. Garrod and Parkes, and makes some calculations to show that, in the healthy adult of average size, it is only necessary that five pints of fluid should be effused into the stomach and bowels, in order to reduce the blood to the condition of that in the stage of collapse of cholera; and he believes that, in the less acute cases, when the evacuations exceed the above quantity, absorption is not altogether suspended, or some of the liquids which are drunk pass through the alimentary canal. He considers that the diminished volume and the thickened state of the blood, account satisfactorily for all the symptoms of cholera, and that the blood is not poisoned, except in cases of consecutive fever. He adduces the fact of the temporary restoration of the patient by diluting the blood with a weak saline solution, as an additional proof that the circulating fluid is not poisoned in the collapse of cholera.

The author deduces his conclusions on the mode of communication of cholera from the above views of its natural history and pathology, in the following manner:

"Diseases which are communicated from person to person are caused by some material, which passes from the sick to the healthy, and which has the property of increasing and multiplying in the systems of the persons it attacks. In syphilis, smallpox, and vaccinia, we have physical proof of the increase of the morbid material, and in other communicable diseases the evidence of this increase, derived from the fact of their extension, is equally conclusive. As cholera commences with an affection of the alimentary canal, and as we have seen that the blood is not under the influence of any poison in the early stages of this disease, it follows that the morbid material producing cholera must be introduced into the alimentary canal—must, in fact, be swallowed accidentally, for persons would not take it intentionally; and the increase of the morbid material, or cholera poison, must take place in the interior of the stomach and bowels. It would seem that the cholera poison, when reproduced in sufficient quantity, acts as an irritant on the surface of the stomach and intestines, or, what is still more probable, it withdraws fluid from the blood circulating in the capillaries, by a power analogous to that by which the epithelial cells of the various organs abstract the different secretions in the healthy body. For the morbid matter of cholera having the property of reproducing its own kind, must necessarily have some sort of structure, most likely that of a cell. It is no objection to this view, that the structure of the cholera poison cannot be recognized by the microscope, for the matter of smallpox and of chancre can only be recognized by their effects, and not by their physical properties."

Such is the train of thought which has led Dr. Snow to form his opinions on the mode of communication of cholera, but he considers that he can now adduce sufficient direct proof to establish the above manner of propagation of the disease, irrespective of its pathology; and he believes also, that some diseases, as typhoid fever and plague, in which the blood is undoubtedly poisoned, are propagated by swallowing the morbid material of the disease.

In regard to the propagation of cholera, the author says—

"The instances in which minute quantities of the ejections and dejections of cholera patients must be swallowed, are sufficiently numerous to account for the spread of the disease; and on examination, it is found to spread most where the facilities for this mode of communication are greatest. Nothing has been found to favor the extension of cholera, more than want of personal cleanliness, whether arising from habit or scarcity of water, although the circumstance till lately remained unexplained. The bed linen nearly always becomes wetted by the cholera evacuations, and as these are devoid of the usual color and odor, the hands of persons waiting on the patient become soiled without their knowing it; and unless these persons are scrupulously clean in their habits, and wash their hands before taking food, they must accidentally swallow some of the excretion, and leave some on the food they handle or prepare, which has to be eaten by the rest of the family, who, amongst the working classes, often have to take their meals in the sick room: hence the thousands of instances in which, amongst this class of the population, a case of cholera in one member of the family is followed by other cases; whilst medical men and others, who merely visit the patients, generally escape. The *post-mortem* inspection of the bodies of cholera patients has hardly ever been followed by the disease, that I am aware, this being a duty that is necessarily followed by careful washing of the hands; and it is not the habit of medical men to be taking food on such an occasion. On the other hand, the duties performed about the body, such as laying it out, when done by women of the working class, who make the occasion one of eating and drinking, are often followed by an attack of cholera; and persons who merely attend the funeral, and have no connection with the body, frequently contract the disease, in consequence, apparently, of partaking of food which has been prepared or handled by those having duties about the cholera patient, or his linen and bedding."

After some further remarks, the following passage occurs:

"The mining population of Great Britain have suffered more from cholera than persons in any other occupation,—a circumstance which I believe can only be explained by the mode of communication of the malady above pointed out. Pitmen are differently situated from every other class of workmen in many im-

portant particulars. There are no privies in the coal-pits, or, as I believe, in other mines. The workmen stay so long in the mines that they are obliged to take a supply of food with them, which they eat invariably with unwashed hands, and without knife and fork."

A letter is quoted respecting a coal-pit near Leeds, which is described as one huge privy, and the author continues—

"It is very evident that, when a pitman is attacked whilst at work, the disease has facilities for spreading among his fellow-laborers such as occur in no other occupation. That the men are occasionally attacked whilst at work I know, from having seen them brought up from some of the coal-pits in Northumberland, in the winter of 1831-2, after having had profuse discharges from the stomach and bowels, and when fast approaching to a state of collapse."

In addition to the above means of the communication of cholera, it is an important part of Dr. Snow's theory, that it may be also communicated through the medium of water, by the cholera evacuations getting into pump-wells and other local supplies of water, owing to accidental communications between drains or cesspools and the wells, &c. And also by these evacuations flowing in the usual way down the sewers into the Thames, and other rivers, from which, in too many instances, the water supply of the population is taken. Dr. Snow derives the chief part of the evidence which he adduces in favor of his views from this part of the subject, which consequently occupies the greater part of his work.

He relates many instances, chiefly from the epidemic of 1849, in which sudden and severe outbreaks of cholera occurred amongst persons using the water of a ditch or pump-well, which was constantly polluted with excrementitious matters. The most striking feature of these outbreaks is, that the cases occurred nearly altogether, very soon after a single case happened amongst the persons whose evacuations contaminated the water. In a very severe outbreak of cholera, which took place in Wandsworth Road, London, in 1849, the water was not habitually polluted, but became so by the bursting and overflow of the house drains into the water tanks, during a thunder storm. The houses in which this catastrophe occurred were seventeen in number; they were semi-detached villas, and constituted the genteel suburban dwellings of a number of professional persons and tradespeople. The houses were drained and supplied with spring water on one plan. The water was conducted into a series of tanks placed underground at the back of each house, at the same level, and the water which overflowed ran into a drain which also received the house drains and the overflow from the cesspools; the contents of this drain flowed back into the tanks at the time of the thunderstorm. When the tanks were afterwards opened under the superintendence of the Commissioners of Sewers, the privy soil was found from six to nine inches deep in them. In order to explain how water can be used under these circumstances, it is necessary to state, that when privy soil is left at rest in water it settles principally to the bottom, leaving the water above not much altered in physical appearance. At the time the overflow of the drain took place, a lady in one of the houses had been suffering two days from the premonitory symptoms of cholera, of which she died two days afterwards, and two days subsequently to her death the great outbreak took place. About half the persons living in the seventeen houses were attacked, and about half of those who were attacked, died. The cholera extended to all the houses in which the water was polluted, except to one or two that were empty, or nearly so, and it did not extend to any others. There were plenty of houses both in a continuous line with these, and before and behind them, but they were free from cholera during this outbreak.

Dr. Snow gives a very full account of the fatal and extensive outbreak of cholera which occurred last autumn in Broad Street, Golden Square, and its neighborhood, and he has illustrated this subject with a map, showing the number of fatal attacks and the situation of the houses in which they occurred. He says that, as soon as he became acquainted with the situation and extent of this irruption of cholera, he suspected some contamination of the water of the much frequented street-pump in Broad Street, and that further inquiry showed him that there was no other circumstance or agent common to the circumscribed locality

in which this sudden increase of cholera occurred, and not extending beyond it, except the water of this pump. He, however, asked permission to take a list at the General Register Office of the deaths which were registered during the first two days of the outbreak, and made a personal inquiry respecting them of which the following is the result:

"On proceeding to the spot, I found that nearly all the deaths had taken place within a short distance of the pump. There were only 10 deaths in houses situated decidedly nearer to another street pump. In 5 of these cases the families of the deceased persons informed me that they always sent to the pump in Broad Street, as they preferred the water to that of the pump which was nearer. In 3 other cases, the deceased were children who went to school near the pump in Broad Street. Two of them were known to drink the water; and the parents of the third think it probable that it did so. The other two deaths, beyond the district which this pump supplies, represent only the amount of mortality from cholera that was occurring before the irruption took place.

"With regard to the 73 deaths occurring in the locality belonging to the pump, there were 61 instances in which I was informed that the deceased persons used to drink the pump-water from Broad Street, either constantly or occasionally. In 6 instances I could get no information, owing to the death or departure of every one connected with the deceased individuals; and in 6 cases I was informed that the deceased persons did not drink the pump-water before their illness.

"The result of the inquiry then was, that there had been no particular outbreak or increase of cholera in this part of London except among the persons who were in the habit of drinking the water of the above-mentioned pump-well."

The above 83 deaths are only a part of those which took place even on the first two days, for the registration takes place generally a day or two after the death. The whole number of deaths which have been recorded as connected with this outbreak was 614. Dr. Snow says that he was prevented from extending his inquiry to the whole of these cases on account of researches he was making elsewhere, but he considers the 83 first registered as offering a fair average. He, however, mentions the immunity of the workmen at a brewery in Broad Street, which was surrounded with houses and workshops in which fatal attacks occurred. The brewer's men never went or sent to the pump. The inmates of the workhouse, situated in the district of the outbreak, enjoyed also a nearly similar immunity, they having a pump of their own, in addition to the supply of the water company, and never sending to the street-pump. Amongst other instances which the author mentions of the influence of the water of this pump is the remarkable one of a lady who formerly resided in Broad Street, but lived latterly at the West-end, Hampstead, and had the water from this pump taken out of town to her every day. She and a niece, who was visiting her, were fatally attacked with cholera at the time of the outbreak in Broad Street. The only other person who drank of this water at the West-end was a servant, and she had diarrhœa. There were no other cases of cholera at that time in the neighborhood where these occurred. Dr. Snow detected organic impurities in the water of the pump-well in Broad Street, but he could not tell at the time how they reached the well. The parish authorities have, however, since determined this point by excavations which they ordered. The contents of a cesspool, situated only three feet from the well, were found to pass through its decayed wall and percolate through the intervening ground, and then run through the open brickwork of the side of the well. It is worthy of notice that a child was suffering with symptoms of cholera in the house to which the cesspool belongs for three days before the great outbreak, and that its dejections were emptied into the cesspool.

The author enters at some length on a statistical inquiry into various epidemics of cholera with which London has been visited, in order to show the connection between the mortality of this disease and the water supply of the various metropolitan districts. The most important part of this inquiry is a personal investigation which he undertook in the summer of 1854, in the south districts of London. The south districts of London are all, with the exception of Greenwich

and Lewisham, supplied with water by two companies, the Lambeth Company and the Southwark and Vauxhall Company. In 1849 the Lambeth Company obtained their supply near the Hungerford Suspension Bridge, and the other Company at Battersea Fields, as at present. The water of both Companies contained the sewage of London as it was washed to and fro with the tide, and the whole of the districts which they supplied suffered severely from cholera in that year. In 1852 the Lambeth Company changed their source of supply to Thames Ditton, a part of the river beyond the influence of the tide, and out of reach of the sewage of London. In the epidemic of the latter part of 1853, and in that of 1854, the districts to which this new water supply extended suffered a much less mortality from cholera than in the epidemic of 1845-49; but as the supply of the Lambeth Company is intermixed with that of the Southwark and Vauxhall Company, it was impossible to ascertain the precise effect of the new water supply on the mortality without a personal inquiry. On this point the author says:

"In the sub-districts enumerated in the above table as being supplied by both companies, the mixing of the supply is of the most intimate kind. The pipes of each company go down all the streets, and into nearly all the courts and alleys. A few houses are supplied by one company and a few by the other, according to the decision of the owner or occupier at that time when the water companies were in active competition. In many cases a single house has a supply different from that on either side. Each company supplies both rich and poor, both large houses and small; there is no difference either in the condition or occupation of the persons receiving the water of the different companies. Now it must be evident that, if the diminution of cholera, in the districts partly supplied with the improved water, depended on this supply, the houses receiving it would be the houses enjoying the whole benefit of the diminution of the malady, whilst the houses supplied with the water from Battersea Fields would suffer the same mortality as they would if the improved supply did not exist at all. As there is no difference whatever, either in the houses or the people receiving the supply of the two water companies, or in any of the physical conditions with which they are surrounded, it is obvious that no experiment could have been devised which would more thoroughly test the effect of water supply on the progress of cholera than this, which circumstances placed ready made before the observer.

"The experiment, too, was on the grandest scale. No fewer than 300,000 people of both sexes, of every age and occupation, and of every rank and station, from gentlefolks down to the very poor, were divided into two groups without their choice, and, in most cases, without their knowledge; one group being supplied with water containing the sewage of London, and amongst it, whatever might have come from the cholera patients; the other group having water quite free from such impurity."

Dr. Snow applied at the Registrar-General's office for a list of the deaths from cholera which were registered during the first seven weeks of the epidemic of 1854, in all the districts to which the supply of the two water companies extends, and he went to the houses in which the attacks took place, in order to ascertain the water supply. In stating the results, he has divided the seven weeks into two periods, the first of four weeks, and the second of three weeks. In the first period there was 334 deaths from cholera in these four weeks in the districts to which the water supply of the Southwark and Vauxhall and the Lambeth Company extends. Of these it was ascertained that, in 286 cases the houses where the fatal attack of cholera took place, were supplied with water by the Southwark and Vauxhall Company, and in only 14 cases was the house supplied with the Lambeth Company's water; in 22 cases the water was obtained by dipping a pail directly into the Thames; in 4 instances it was obtained from pump-wells; in 4 instances from ditches; and in 4 cases the source of supply was not ascertained, owing to the person being taken ill whilst travelling, or from some similar cause.

When the number of houses supplied by each company respectively is taken into account, namely, 40,046 by the Southwark and Vauxhall Company, and 26,107 by the Lambeth Company, it is found that the cholera was 14 times as

fatal amongst persons having the impure water of the former company as amongst those having the purer water from the Thames Ditton. In the next period of three weeks, 1180 deaths from cholera was registered in the districts supplied by the two companies; of these fatal attacks, 977 took place in houses supplied with the water of the Southwark and Vauxhall Company, and 84 in houses supplied with the improved water of the Lambeth Company; in the remaining cases the water was obtained from wells and other sources. When the number of houses supplied by each company is taken into account as before, it is found that the cholera was 8 times as fatal in the houses supplied with water from the Thames at Battersea Fields, as in those supplied with the more pure water from Thames Ditton. During the remainder of the epidemic of 1854, the Registrar-General caused an inquiry to be made through the District Registrar respecting the water supply of the houses in which fatal attacks of cholera took place in the districts supplied by the above two companies; and the result of this inquiry was, that, in the middle and latter part of the epidemic succeeding the first seven weeks, the mortality of cholera was more than 5 times as great in the houses supplied with the impure water of the Southwark and Vauxhall Company as in those supplied with the purer water of the Lambeth Company.

The mortality in the houses supplied by the Lambeth Company kept increasing during the progress of the epidemic just as it increased in the districts in the north of the Thames, where it was not influenced by any fault in the water supply, yet the population receiving the improved water supply of the above company, although chiefly living at the lowest level of any part of the metropolis, and being intimately mixed up with a population suffering a very high rate of mortality from this disease, enjoyed throughout the epidemic an immunity from cholera greater than that of the population of London on the north of the Thames.

Dr. Snow enters at some length into the water supply of many of the chief towns of the kingdom, to show its connection with the mortality of cholera in the various epidemics of that disease, but we have not space to follow him in this part of his inquiry. He says, that in examining the effect of polluted water as a medium of the cholera poison, it is necessary to bear constantly in mind the more direct way in which the poison is also swallowed, as he explains in a passage we quoted near the beginning of this notice. On this account he says that the same polluted water causes a higher mortality in dwellings crowded with the dirty and poor than in those of cleanly, well-to-do people, owing to the disease spreading also from person to person in the first kind of dwellings, and not in the latter.

The author gives a number of directions for avoiding and suppressing cholera. They consist chiefly in the observance of extreme cleanliness about the sick, and in avoiding the use of water contaminated with excrementitious matters. The general water supply of London is in progress of improvement, owing to Acts of Parliament which have been passed since the first edition of Dr. Snow's book appeared, but the pump-wells are generally placed in most extraordinary proximity with drains and cesspools, and we consider that, with the exception of artesian wells and a few others, the pumps in large towns cannot be looked on with too much suspicion.

We leave our readers to form their own conclusions from the above abstract of Dr. Snow's opinions and researches. Whatever their conclusions may be we think they will agree with us that the subject is one of very great importance, and well deserving of further investigation.

The Diagnosis of Diseases of the Brain, Spinal Cord, Nerves, and their appendages.

By J. RUSSELL REYNOLDS, M. D., London University Medical Scholar, Assistant-Physician to the Hospital for Sick Children. 8vo. Churchill, 1855.

The object of this book is fully expressed in its title. The manner in which this object is carried out may be characterized as extremely *systematic*. The several diseases are carefully dissected after a prescribed order, and their several fragments are arranged in lettered paragraphs, so that on turning over the

pages the same letter or figure always indicates the corresponding subject. This plan no doubt will be pleasing to a great number of persons, but there are others who form their ideas best from strong and vivid pictures of the undiseased disease, and who get confused when the several detached parts are put before them, however orderly the artificial arrangement may be, and these persons may not be so well satisfied with the plan of the work as the others. Be the merits of the plan what they may, however, there is no doubt that much care and labor has been expended in elucidating what all must admit to be a very difficult subject, and that no one can rise from the perusal of the work without having gained much valuable information.

After stating the objects of diagnosis and its limits, and considering the elements for diagnosis, Dr. Reynolds proceeds to give the classification adopted. He adduces good reasons for not framing a classification either upon anatomical or physiological grounds, and decides in favor of a clinical classification.

"The object of this treatise being neither pathology nor anatomy, but the discrimination when possible of their point of contact, and the recognition of its impossibility when such impossibility exists, a classification, based upon clinical grounds, is adopted, as it appears to my own mind to be the most consistent with the two classes of terms to be brought together, and because, farther, it is the most readily applicable, avoiding one of the difficulties which beset the employment of works on diagnosis, that of having to find out what the disease is before being able to turn to the proper part of a book for information on the subject.

"The basis of classification which I am about to propose and adopt, is formed by the three objects of diagnosis;—locality, nature, and lesion. In some cases the primary lines of division are in accordance with one, and in some cases with another, the object being to form clinical groups which may be readily recognized, rather than those which shall be open to no criticism on the score of system. Thus, although the distinction of intrinsic and extrinsic diseases is one of primary importance, and so much so that I have given separate consideration to it in an early chapter, it is left to form a tertiary basis of division in other instances, as for example, in the apoplectic class. The general lines of arrangement are the following: groups are formed by,—first, the locality or organ affected; secondly, the nature of its affection; and thirdly, the anatomical conditions which underlie them. In this place only the headings, or those large groups, are mentioned whose consideration will form the topics of distinct chapters. At the commencement of each of the latter, a fuller list is given of the various anatomical conditions which may occasion the phenomena of the group.

" I. Diseases of the encephalon.

A. Acute.

1. Febrile, or inflammatory. Chap. VI.
2. Non-febrile.
 - a. Apoplectic diseases. Chap. VII.
 - b. Diseases marked by delirium. Chap. VIII.
 - c. Convulsive diseases. Chap. IX.
 - d. Diseases marked by pain. Chap. X.

B. Chronic Diseases.

1. Marked by increased activity. Chap. XII.
 - a. Ideation, its characteristic being hallucination, &c.
 - b. Sensation, " " pain.
 - c. Motility, " " spasm.
2. Marked by diminished activity. Chap. XIII.
3. Marked by the combination of increased and diminished activity. Chap. XIV.

" II. Diseases of the spinal column and cord.

A. Acute. Chap. XVII.

B. Chronic. Chap. XVIII.

"III. Diseases of the nerves. Chap. XX.

A. Structural, or organic.

1. Neuritis.

2. Tumor.

B. Functional, or dynamic.

1. Neuralgia, and spasm.

2. Anæsthesia, and paralysis."

It is impossible, as well as unnecessary, to consider in order the whole contents of this book, and all that we can propose to do is, to give such references as shall illustrate the manner and opinions of the author. A very favorable and instructive specimen of the manner in which a *general* question is treated, may be found in the remarks upon the way in which affections of the brain, spinal cord, and nerves are separated clinically.

"The general grounds upon which diagnosis of disease in other organs is based, are partially applicable to the group of nervous derangements, and partially inapplicable. Modifications in the processes of thought, and in the conditions of perception, are referred at once to direct or indirect interference with the functions of the brain; but the absence of such phenomena (when motor paralysis exists, for instance) does not exclude the brain from the attribution of disease. Thus, while on the one hand the actual disturbance of its special function indicates that a certain portion of the nervous system is the locality of disease; on the other hand, the absence of such special derangement by no means proves the reverse. As it is well understood that, in the case of motility in relation to volition, it is necessary, for the passing over of a volitional impulse to the contracting muscle, that each portion of the nervous system engaged in this transference should be intact, so it is equally obvious that the two extremes (volition and motion) may be severed by lesion of any part (*i. e.*, either nerve-trunk, cord, or brain) which lies between them; and thus the simple fact of paralysis (to volition) gives no indication with regard to the locality of disease. The same is true with regard to sensation as a whole.

"Thus, one common ground of diagnosis (in respect of other diseases) is removed to a certain extent, since the complete performance of many important nervous functions is the combined product of its three great divisions. These special considerations are, however, of some value; and, taken in conjunction with the distribution and combination of symptoms, enable us generally to arrive at a diagnosis. Attention is directed to—

"First. The special functions involved. We infer—

"A. That the brain is the seat of disease when there is a positive change in the processes of volition, ideation, emotion, and the perception of sensorial impressions—*i. e.*, when the class of functions is disturbed whose special consideration formed Section I., A., 1, 2, 3, in the chapter on 'Elements for Diagnosis,' and when certain extrinsic symptoms are referred locally to the head; and when emotion yet preserves its relation to motility.

"B. That the spinal cord is the organ affected when, no signs of brain disease being present, perception, volition (phenomenally sensation, and voluntary movement), and often emotion are cut off more or less completely from some portion or portions of the body: these portions yet preserving their motile relationship to the cord, as exhibited by reflex and tonic spasm, by associated movements, and electric irritability; and when the extrinsic symptoms are referred locally to the spinal region. Further, the occurrence of spasm and convulsion, especially of tonic character, and of all abnormal involuntary movements in excess, indicates a probability of spinal rather than of cerebral injury.

"C. That the nerve-trunks are originally affected when there are signs of local injury in their course, when the special functions of particular nerves are alone involved; the brain and spinal cord presenting no positive change in their actions; and if motility and sensibility are lost, when the loss is complete, no reflex actions, and no electric irritability remaining.

"Although considerations of this kind may, under certain circumstances, lead to a diagnosis of locality, there is always some uncertainty from the unsatisfactory manner in which negative evidence is interpreted. Disease of the brain

(for instance) need not affect volition or ideation, and disease of the cord may present the features of 'nervous' disease. There are, further, many complicated cases in which positive evidences of disease in the medulla spinalis are found in conjunction with the negative signs of cerebral affection; for example, hemiplegia with exalted reflex activity: and there are two modes in which this relation may be explained—(a) that the simple fact of removed or diminished cerebral power exaggerates, *per se*, the activity of the spinal cord; and (b) that the reflex phenomena are due to a morbid spinal condition, not necessarily associated with the cerebral, but in particular cases developed either cutaneously or subsequently to the lesion of the brain. The first explanation rests upon, and is at the same time taken to prove the supposition of an antagonism between these two nervous centres: an antagonism which, if not entirely imaginary, is at all events very incorrectly stated: and the second mode of explanation appears therefore to be that which we are alone warranted in adopting. We shall have, then, to consider some diseases which have been referred exclusively to the brain, as dependent upon some primary lesion of that centre, plus an induced, it may be dynamic, condition of the cord.

"We come now to consider the second mode by which this diagnosis (of brain, spinal cord, and nerves from each other) may be established.

"Secondly. The distribution of symptoms (their locality, extent, and limits). The assistance derived from these considerations is based upon the tendency of our mind, a tendency of which experience confirms the truthfulness and utility, to refer a similar modification of dissimilar organs, not to the simultaneous change of both organs, but to a change in something which is common to the two. And again, we are disposed to assign the smallest possible change which can produce the effect as the sufficient cause of the symptoms presented. Thus, in a case of perfect hemiplegia, we, in accordance with the first tendency or law, refer the symptoms to some part of the organism common to all the nerves of sensation and motion of one side (the cerebrum), rather than to the nerves and muscles themselves; and in a case of local paralysis, in accordance with the second disposition or rule, we refer the symptoms to some lesion of the nearest nerve-trunk which is common to all the muscles involved.

"By careful examination the exact seat of injury may sometimes be discovered, especially in spinal diseases, although these limitations are always liable to error. However, we conclude—

"A. That the brain is the seat of lesion when several of the special senses are simultaneously affected; when the muscles and general sensory nerves are implicated longitudinally and unilaterally (hemiplegia): when muscles situated so high as those of the face and tongue are involved, and the orbicularis of the eyelids does not share in their affection. In those rare cases of bilateral (or transverse) paralysis (paraplegia) resulting from some cerebral change, the symptoms at some period of the case have generally referred to the head (by their special character), so that by a combination of the two classes of observations, the diagnosis may be almost universally established.

"B. That the spinal cord is the organ affected when the symptoms of motor and sensory character are distributed transversely or bilaterally, inducing paraplegia or transverse spasm. The precise locality may be estimated sometimes from the anatomy of the spinal nerves. If the lesion or disease is high, speech, deglutition, respiration, &c., are impaired. There is often erection of the penis, the retention or involuntary discharge of feces and urine, according to the conditions already described.

"C. That the nerve-trunks are the seat of lesion when the symptoms are referable to an isolated muscle or group of muscles, or to a small portion of the sensory surface. When paralysis is the symptom, the irritability of the muscles to electric stimulation is quickly lost; and the symptoms show no disposition to wander from the special localities affected.

"The means of distinction may be resumed thus:

"1. When perception, ideation, volition, and special sensation are affected, the motor and general sensory changes exhibit a unilateral distribution, the brain is commonly the seat of disease.

"2. When the mental functions are unchanged, and motility and general

sensibility are affected bilaterally, we infer the spinal cord to be the locality of lesion.

"3. When the relations between motility, volition, and reflexion are lost, the mental functions being unchanged, and when the motor and sensory disturbances are purely local, we refer the disease to some of the nervous trunks. In each case the extrinsic symptoms are referable to the special locality or region affected."

As an illustration of the manner in which a *special* question is treated, we may subjoin the remarks upon the differential diagnosis of idiopathic meningitis and the cerebro-meningeal complications of fever.

"No greater difficulty of diagnosis can occur than that which is sometimes presented by a case in which the question arises, whether the symptoms are due to meningitis with fever of a low (or typhoid) type, or to typhoid fever with cerebro-meningeal complication. The question is not so much whether actual inflammation is or is not present (for it may exist in the latter); but whether that inflammation (or cerebro-meningeal condition) is primary or secondary; in other words, whether the fever is the result, or secondary product of the inflammation, or whether the inflammation is one of the many secondary phenomena of the fever. (The term 'fever' being here employed to denote the general organic condition induced by a specific morbid poison.)

"The diagnosis can only be established by a consideration of each class of symptoms, in their absolute and relative development. In the following paragraphs the contrast will be drawn between typhoid and typhus fevers on the one hand, and idiopathic meningitis on the other.

"A. Prodromata, or those symptoms which occur prior to the appearance of marked cerebral symptoms.

"1. Extrinsic. These are rigors followed by febrile reaction, its oppressive headache, anorexia, and general (systemic) disturbance; often by vomiting and diarrhoea (in typhoid). The pulse is frequent and feeble, and the expression of countenance dull and heavy.

"2. Intrinsic. Mental confusion or incapacity with sensorial disturbances, such as tinnitus aurium, muscæ, &c.; and general restlessness, with occasional twitchings of muscles.

"It is to be borne in mind that these symptoms, so common in continued fever, rarely exist to such a marked degree in meningitis, without being accompanied by others of much greater intensity and more serious character.

"B. Developed symptoms. In the majority of cases the extrinsic signs of general disturbance are sufficient to account for all the intrinsic phenomena, the latter bearing a direct proportion to the former; but in others doubt arises, and in order to remove it, we have to consider *seriatim*—

"1. Extrinsic. There may be the special signs of typhoid, or typhus, viz., the peculiar exanthem of each (rose-colored, lenticular spots, or the mulberry rash). In either case these are demonstrative evidence of a specific disease. But they may be only doubtfully developed, and we have to carry the investigation further. Epistaxis, and enlargement of the spleen, are common. The pulse is frequent and often irregular; but it does not present the notable variations observed in meningitis. The expression of face is peculiar, and its color 'muddy-looking' in typhus. (See intrinsic symptoms, mental.) In typhoid there is abdominal pain, tenderness of the iliac fossæ, gurgling in the right, and diarrhoea, with evacuations of peculiar character: none of which is constantly or equally marked in meningitis; whereas there is not the frequent, abundant, and persistent vomiting of the latter. In typhus, there is a degree of general prostration almost unknown in other diseases. Complications of bronchitis and pneumonia occur much more frequently than in cerebral affections. The conjunctivæ may be injected, but not to the degree observed in meningitis.

"2. Intrinsic symptoms (or derangement of nervous functions).

"a. Mental. The expression of countenance may be natural in typhoid; in no one of forty-three cases of typhus was it natural throughout (Jenner).^{*} In typhoid, as a rule, it is oppressed and heavy; in typhus the oppression is still

^{*} Typhus, Typhoid, and Relapsing Fevers, p. 20, and seq.

more marked. Dr. Jenner describes it as that of 'a drunken man just disturbed from sleep.' This is a notable distinction from meningitis; but in rare cases of typhoid the expression is highly vivacious. Delirium is present in a large majority of cases of fever; it may commence on the third day, but is more common in the second week. In general, it is of mild inoffensive character, and is preceded by confusion of thought. The dulness of delirium is most marked in typhus; and although, in exceptional instances, it may be vivacious in typhoid, it rarely, if ever, assumes the violent, fierce character found in meningitis. In continued fever, delirium is in proportion to the febrile state; in cerebral affections, it is more highly marked than the fever will account for. Somnolence is frequent, and often profound, but its approach is more gradual than in meningitis. Thus typhoid, much more commonly than typhus, is the source of difficulty; but its extrinsic characters are more distinctive.

"*b. Sensorial.* Hyperæsthesiæ, or more properly dysæsthesiæ, are extremely rare. Pain in the head is rarely absent; but it is of much less intensity than in inflammation; it is rarely within the patient's powers of description (either from his confused intellectual condition, or the diffused extent and unmarked character of the pain itself); and it almost invariably disappears when delirium sets in. These characteristics differ widely from those of inflammation, the patient with meningitis constantly screaming with pain in his wildest delirium. The sensorial changes which occur in fever are commonly those of deficiency, such as deafness, and general unimpressibility.

"*c. Motorial.* Spasmodic twitchings occur in the muscles of the typhoid patient: general convulsions sometimes occur in typhus. Retention of urine, and its involuntary discharge when present in the latter, are observed at an earlier period than when resulting from primary cerebral affections.

"If all these differences are duly considered, there can be little doubt, except in rare cases; and these rarer cases are those in which, most probably, in addition to the effect of a special poison circulating in the blood of the nervous centres, there is more or less variation from the healthy standard in respect of its physical conditions of supply; viz., congestion of the cerebrum, its meninges, or both; and of this congestion, the symptoms referred to are the vital (dynamic) phenomena.

"The important object for diagnosis is, not the precise anatomical condition of the encephalon (whether there is inflammation, or congestion), but whether the cerebral state (whatever it may be), is idiopathic, and is to be treated as such; or whether it is merely one of many results produced by a general, systemic disease: and this object we may attain, in the greater number of cases, by the indications already pointed out."

Dr. Reynolds dedicates his work to Dr. Marshall Hall, but we are glad to see that this does not prevent him from giving an opinion of his own. He places, for instance, epilepsy, catalepsy, hysteria, chorea, and paralysis agitans among the chronic diseases of the brain, and not among chronic diseases of the spinal cord.

"We cannot but admit," he says, "that the precise locality of their cause is uncertain; although it appears probable that epilepsy and catalepsy are closely related to functional derangement of the spinal cord, and that hysteria and chorea have their starting-place in some morbid condition of the emotional and sensori-motor centres. But how far diseases of the blood are connected with any or all of these, we cannot at present say; the symptoms of epilepsy, catalepsy, hysteria, &c., are, many of them, essentially modifications of the cerebral functions; and the lesions which are discovered, post mortem in the former, are most commonly present in the encephalon. Deficiency, or a perverted condition of the will in many of its relationships, are as constant phenomena of these diseases as are the signs of spinal activity: the mind, in its relations to motility, and sensation, is often more deeply affected than any other separable vital element; and, until it can be shown that all the symptoms of these various and ever-varying maladies are clearly referable to particular derangements of definite nervous centres, it appears to me most judicious to leave the question so far open as it is left by the present chapter, and the subsequent position of those diseases—i. e., to group them with clinically allied affections, involving (as they

most certainly do to a notable extent) the proper functions of the brain. It has been necessary to do this with regard to acute convulsive affections; and the reasons for adopting this mode of classification are the same in each instance."

Nor does Dr. Reynolds appear to attach the same importance as Dr. Hall, to spasm in the muscle of the neck and larynx, in the causation of epilepsy.

"It has not been shown," he says, "with what relative frequency contractions take place in it, and in other parts of the body; but from my own examination (of eighty cases of epileptics, for example), I cannot find that the neck is more commonly affected than other parts of the body. It is very difficult to arrive at a positive conclusion on the subject, since so many of these phenomena pass unnoticed by the patient, and we are unable to assert what occurs during the intervals of observation."

Again:

"It is quite certain that the trachelismus occurs in some epileptics, and that it may (by impeding the return of blood from the head) induce temporary congestion; but I have very rarely found that epileptics suffer from trachelismus during the intervals of their seizures; and although it is sometimes highly marked at the onset of the attacks (when spasm is universally present), I have observed many cases in which the tracheal muscles were quite flaccid, notwithstanding the darkness of face and leaden hue of the body generally."

With these remarks we leave the book to tell its own story, only adding the hope that it may lack no opportunity for so doing.

The treatment of Chorea by Blisters. By M. DELAHARPE, of Lausanne. (Gaz. Hebdom. de Méd. et Chir., 19th Jan. 1855.)

This idea is not new. On the contrary, it occurred to M. Max. Simon several years ago, and was put in practice by him, and subsequently by M. Vanderlebens, of Stromberg, and M. Jenni, of Euneda, in Switzerland. Indeed, in the paper under consideration, M. Delaharpe relates cases by the last-named two observers.

M. Delaharpe does not enter into any theoretical speculations upon the mode in which the blister operates, but simply relates his cases, and leaves them to tell their own tale. His plan is to apply the first blister to the leg of the side which is most affected—one side is almost always more affected than the other. The blister is applied immediately below the tuberosity of the fibula, as for sciatica, and kept on until vesication is complete. Then the cuticle is removed, and the sore dressed in the ordinary way. The first dressing is generally attended with some aggravation of the symptoms; but this is only transitory, and on the next day, or the day following, the symptoms are much alleviated, not only in the blistered limb, but also in the others. When the first blistered surface ceases to suppurate, a second blister is applied on the same side. The effects of this blister are more marked than those of the first, and the choreic symptoms very rarely last more than two days from the time of this second application, and six or seven days from the commencement of the treatment. If, however, the chorea is obstinate, a third blister is placed behind the neck, where, indeed, it is placed at the beginning, if the head is much agitated. The position of the blister, indeed, must be determined by the symptoms of the case. If both sides are affected uniformly, first one side must be blistered, and then the other. If the arm is chiefly affected, it must be blistered, the point chosen being below the insertion of the deltoid.

Though M. Delaharpe considers blisters as by far the most efficacious part of the treatment, he does not depend upon them exclusively. On the contrary, he removes his patients from all sources of moral excitement, insists upon the discontinuance of every kind of study, and gives cod-liver oil, steel, quinine, and other appropriate tonics for some time after the movements are at an end. He completes the cure by these means.

Seven cases are cited out of several which have occurred in the author's practice, and of these we take five, the other two not being very much to the point.

CASE 1.—A little child, of good constitution, very intelligent, and four years of

age, was admitted into the hospital at Lausanne, on the 30th April, 1853, suffering from slight general chorea. The symptoms had originated in a fright received about three weeks before. The left side was most affected. Walking was possible, but not speech. Two blisters applied successively, one to the left leg, the other to the left arm, completed the cure, and she left the hospital quite well on the 16th of May.

CASE 2.—A thin girl, very tall for her age (13 years), was admitted into the hospital on the 11th April, 1853. She had suffered from slight general chorea for forty days. The appetite was good, and the gait and speech unaffected. The muscles of the face and arms were the parts particularly affected. The symptoms ceased entirely under the application of two blisters to the arms. She left the hospital on the 9th of May, quite well, having been kept there longer than necessary to secure the advantage of proper food and shelter. The cause of the malady could not be ascertained.

CASE 3.—A girl, *æt.* 11, pale, tall, and thin, of a lymphatic temperament, who had suffered from slight general chorea for some months. The causes could not be ascertained. The left side and the upper limbs were the parts principally affected. The appetite was good, the speech free, the gait natural. The symptoms vanished under the application of two blisters, one to the left thigh, the other to the right arm. She entered the hospital on the 10th of April, and left it on the 26th of May, her stay having been prolonged in order to benefit her general health.

CASE 4.—A watchmaker, *æt.* 18, was admitted into the hospital on the 30th August, 1854. He was seized with general muscular agitation about two months ago, but this had been somewhat relieved by the use of assafoetida and valerian. The whole body is agitated, but the right arm and trunk more than the rest. Onanism and sedentary habits appear to have been the inducing causes. On admission, good diet was ordered, and a blister placed on the right arm, when immediately the agitation diminished. A second blister placed on the left arm, and a third on the right, produced no sensible effect. The movements continued to be relieved, but they were still considerable, particularly when he attempted to stand. On the 14th of September, not being quite so well, the blisters were abandoned, and oxide of zinc given instead. This was done until the 21st, but without any advantageous result. On the 22d, the blisters were resumed, and three applied, one after the other, but without the least benefit. On the 28th, indeed, his state was certainly worse than when admitted into the hospital. On this day, the oxide of zinc was resumed, with the addition of camphor, this addition being indicated by one of the supposed causes of the malady. Three days afterwards there was a sensible improvement. On the 3d of October, the oxide of zinc was discontinued, and the camphor given by itself in large doses. On the 8th, the agitation has ceased, he makes but few grimaces, and the speech is steady. On the 11th, the choreic symptoms have disappeared.

CASE 5.—A spare, irritable girl, *æt.* 13, was admitted into the hospital on the 11th of June, affected with spasmodic movements of both feet, especially while lying awake in bed. She had been in the hospital about three years previously for epilepsy (!) but she had no attacks during the time she remained a patient, and has had none since. The mother reports that the girl was bit with a dog, and that the movements dated from this time (no time is given). At first they came on every eight days, or thereabouts, but lately they had increased in frequency. Now they are brought on by the least contradiction, and the patient throws herself on the ground, and kicks her legs violently about. At these times the movements are not convulsive, and there is no loss of consciousness. When in bed there is a rapid involuntary movement, first in one leg, and then in the other, which lasts from fifteen to twenty minutes, and ceases when she falls asleep. If taken up, the feet fidget about excessively, but the movement does not prevent her from standing. On the 2d of June, these symptoms were varied by two brisk summersaults. M. Delaharpe says that these symptoms ceased under the application of two blisters to the neck, combined with change of circumstance.

These cases are, of course, not very conclusive of themselves, but, taken in

connection with the cases already recorded by MM. Max. Simon, Vanderlebens, and Jenni, they seem to show that blisters will be an important agent of cure in chorea. Nor is it difficult to understand why this should be the case, if, as there is reason to believe, the blisters do good by the inflammatory excitement which they produce. Choreia, and several other forms of convulsive disease, are incompatible with this kind of excitement. Choreia is often, if not always, suspended for the time by the development of one of the exanthemata. Habitual epilepsy is often suspended during the continuance of traumatic or idiopathic inflammation. And, certainly, whooping-cough loses its spasmodic character if it become complicated with traumatic or idiopathic inflammation. There are, indeed, many facts which show the utter incompatibility of convulsion and inflammation or true fever; and this being the case, it is easy to believe that blisters may do good service in the treatment of choreia, and not in choreia merely, but in all affections allied to it. At any rate, the facts cited are valuable as facts.

On Rabies and Hydrophobia. By T. LINDLEY KEMP, M.D. ("Edinburgh Medical and Surgical Journal," Jan. 1855.)

Materials towards the formation of a better knowledge of Hydrophobia. By JOHN N. RADCLIFFE, Esq. ("Lancet," 10th February, and 10th March, 1855.)

Case of Idiopathic Hydrophobia. By M. ELY. ("Gazette des Hôpitaux," 30th September, 1854.)

There has been for some time growing doubts as to the correctness of the generally received opinions respecting hydrophobia, and it has been asked more than once whether this disease is often caused by the bite of a rabid animal. These doubts, however, may now be set at rest, if the evidence which is here before us is freely considered. Indeed, it is not saying too much to affirm that Dr. Kemp has satisfactorily proved that hydrophobia is *seldom if ever* caused in this way. Mr. Radcliffe's papers are incomplete, the writer having had to leave the desk to attend to more serious matters before the walls of Sebastopol, but we know that their object was similar if not identical to that of the gentleman already mentioned. His evidence, however, is different, as we shall have to show on another occasion. M. Ely's case is valuable as a fact, where facts of the kind are but scantily scattered.

Dr. Kemp's paper is one of no ordinary value. It begins with an examination of rabies, or "lyssa" as it was anciently called. This canine affection is marked by delirium, the dog snapping at himself or other dogs, as it is the habit of delirious dogs to do. The ancients believed that this delirious disease could be communicated from one dog to another by a bite, but, what is very strange, they did not believe that it could be communicated by the dog to *man* in this way. "Dogs," wrote Aristotle, "are subject to three disorders—the lyssa, the angina, and the podagra. The first of the maladies makes them mad, and all the animals that they bite become similarly affected, *man excepted*. The disease kills the dogs themselves, and every beast that is bit by a rabid animal, *man excepted*." The idea that this disease could be communicated to man, and that hydrophobia was the form it then took, was the birth of a later time. It originated with Asclepiades—who was an *irregular* practitioner in those days, and whose opinion for other reasons was entitled to little weight—but once originated, it soon got firm hold of the public mind, and from that time to the present it has been the prevailing opinion.

During the last century, however, certain distinctions began to be drawn—distinctions between rabies and hydrophobia, and distinctions between those cases of hydrophobia which were caused by the bite of a rabid animal, and those which were not so caused. Sauvages, Linnæus, and Cullen, were among the first to make these distinctions.

During the last 50 years, moreover, the investigations of educated and scientific veterinarians, have more clearly defined the nature of rabies, and shown that this affection is in no way like the disease called hydrophobia in man, there being no dread of water in rabies, no difficulty of swallowing fluids, and often no increase or alteration in the secretion of saliva. Doubts even have arisen as

to whether rabies was communicated by the bite of a rabid animal. Indeed, dogs have been repeatedly inoculated without rabies being the result, and, on the other hand, rabies has been found to originate in many instances without the agency of the bite, as in isolated kennels. The conclusion, indeed, at which many veterinarians may be said to have arrived is that rabies is an epizootic disease, appearing suddenly, prevailing over a wide extent of country at the same time, disappearing suddenly and remaining absent often for a long time, precisely like an ordinary epidemic. This epizootic is considered by Dr. Kemp to be analogous to influenza.

"Rabies, indeed, would appear, in its earlier or milder form, to be nearly identical with influenza among men,—an epidemic febrile disorder, attended with inflammation of the mucous membrane of the back of the mouth and adjacent parts. Subsequently, at least in the cases that, from the severity of their symptoms, attract notice, and receive the name of rabies, there is violent delirium.

"Destructive to the feeble in health as the epidemic inflammation of the mucous membrane about the nose, fauces, and air passages, called influenza, is in the human species, it rarely or never is accompanied by violent delirium. On the contrary, fatal cases of it generally terminate, owing to the depressing effect of the disease upon the whole system, and not from any extension or transference of the inflammation to the brain. Is there, however, anything in the anatomy of the domesticated animals, particularly of dogs, to make us apprehend that an inflammation of the fauces, of some days' continuance, would probably implicate the brain, and produce a disease of which delirium would be a probable symptom?

"It certainly would appear that there is. In all these animals, and especially in the dog, the organs of smell are very highly developed, and the ethmoid bone is truly 'cribriform,' that is, sieve-like. And when we consider the extent and complexity of the nervous matter between the mucous membrane of the nose and fauces and the brain, we can easily suppose that inflammation of the former might spread to the latter, and in such a case delirium be a symptom; and that this transference should be most frequent in the dog, that domesticated animal in which the olfactory powers are most developed of all.

"So probable and so reasonable does this explanation and cause of the delirium of rabies seem, that, in the absence of contradictory facts, we might assume it as the true account of the pathology of the disease. But we have observations that confirm it, and we are informed that in every fatal case of rabies examined in the Edinburgh Veterinary College, whether in dogs, horses, or cattle (no sheep were examined), the brain behind the ethmoid bone was found with every mark of severe inflammation. Two morbid appearances are common to all cases of rabies, two only but these two invariably; inflammation of the mucous membrane near the termination of the olfactory nerves, and inflammation of the brain in that portion of the brain nearest to where these nerves leave that organ."

If then rabies is an epizootic catarrh, only accidentally inducing delirium, and ending fatally by extending to the brain, and if the saliva be unchanged, the analogy of epidemic diseases leads us to suppose that it is not contagious, and that the cause of hydrophobia must be sought elsewhere than in the virus of a rabid dog. But other evidence than this is contained in Dr. Kemp's pages.

"That a special and peculiar disease in man should be induced by the bite of a rabid dog, is very improbable, owing to the fact that the bite of such an animal is seldom attended by any evil consequences. Hydrophobia is a very rare disease; rabies, during the prevalence of an epidemic, a very common one; and many persons who never suffer the slightest after inconvenience, are bitten by rabid dogs. Supposing, and the supposition is an exaggeration, that half the people so bitten run to a surgeon and have the wounded part cauterized or excised, we have the remaining half who take no such precaution. Of the number of these latter, some idea may be formed from the evidence of Mr. Youatt: 'I was telling,' he said, 'the surgeon to whom I have just referred, that I had operated on nearly four hundred persons, and had been invariably in the habit of using the lunar caustic, and not one had died;' his reply was, 'What

is your *four hundred* compared to the number I have seen since I became connected with St. George's Hospital: myself and colleagues have operated on more than as many *thousands*, and to our knowledge not one has been lost.

"This is the experience of one London hospital, and when the other hospitals, dispensaries, &c., are taken into account, the number of people bitten by dogs in London becomes very great. Assuming that nine-tenths of those that chanced some years before the inquiry to be bitten were bitten by healthy dogs, although the animals were imagined to be rabid, still the number of people bitten by dogs really affected must have been very great. Admitting in the mean time that the excision or cauterization would protect those who were thus treated, the moiety who neglected this precaution must have been very considerable. And yet the hydrophobia in man during this period was scarcely known in the metropolis. All the medical men who were examined before the Committee of the House of Commons in 1830, many of whom were in extensive practice, and all of whom were zealous advocates for the disease, agree as to its extreme rarity. Dr. Todd Thompson stated that the first twenty years that he was in practice he never saw a single case, but that within the last ten he had seen *three* instances. Mr. Earle, in his twenty-five years' experience at St. Bartholomew's (where ten or twelve bitten people would be cauterized in a week), had seen 'living or dead' *nine* cases; Mr. Travers, notwithstanding his connection with St. Thomas's, had witnessed only *ten* cases, and he stated that in twenty years only five cases arrived at St. George's and St. Thomas's; Dr. Babington did not count his, he said. 'It has not occurred to me to meet very lately with any case of the disease, and though I should be able to go a good way back in the enumeration of the cases I have seen, they are not very numerous.' Sir Benjamin Brodie began his studies in 1801, and was always intimately connected with St. George's Hospital, 'where a great number of persons came who had been bitten by dogs supposed to be rabid,' and 'where a considerable number must have been so,' and yet from 1801 to 1816 'he never saw a case of canine madness (in man), nor was there any one admitted into St. George's Hospital. Since that period there had been several.' The other medical witnesses seem to have seen just one case a-piece.

"If these bites from rabid dogs occurred in thousands of cases, in a great many of which, no application of caustic was made, and only some since so bitten had the hydrophobia, it would be difficult to connect the bite with the disease. In point of fact, however, in the vast majority of the cases bitten by dogs admittedly rabid, and in which no hydrophobia appeared, the caustic *could* not at all give protection against the disease if really infectious. The action of caustic upon a poisoned wound is simple; when that salt is applied to an animal texture, the nitric acid combines with the water that is essential to all animal structures, and the whole part touched is thereby destroyed and disorganized, including among the rest the organs of absorption. When these organs of absorption are so destroyed, if any poison be present it cannot be absorbed and taken into the system; and therefore, cannot produce any deleterious effect. But any poisonous fluid placed in an open wound would certainly be taken up, perhaps in three, certainly in twenty minutes; and cauterization, after that time has lapsed, can have no prophylactic effect. Very rarely, however, is the caustic applied so soon as this; and usually days, and often weeks, are allowed to elapse between the infliction of the bite and the application of the caustic. Indeed, any time within a fortnight seems to be held to be immaterial.

"The case, then, is this. In one large city (and other cities are quite analogous in this respect) thousands and tens of thousands are bit by rabid dogs; the immense majority of these forget all about it, and a very trifling number, not perhaps two dozen (and some of whom had probably never been bitten at all), after an interval of months, or even, according to some, after an interval of thirty years, take a disease. Is it likely—is it credible, that this disease arises from morbid matter proceeding from the mouth of a dog suffering from delirium consequent upon epidemic catarrh?"

It does not follow, however, that hydrophobia is never induced by the bite of a dog, in certain predisposed states of the constitution. On the contrary, it is probable that this may be one cause, for the allied affection, tetanus, is often

produced by slight punctured wounds. In the majority of cases, however, hydrophobia can only be referred to the same kind of causes as hysteria, trance, ecstasy, and no physical and local injury whatever can be detected. Of these cases, there are several on record, but we will only cite two. One by Dr. Kemp, which also is one which was cited by Dr. Cullen for the same purpose now more than 100 years ago; the other is by M. Levy.

CASE.—A young gentleman was, while walking during a hot summer day, attacked by a pain in his stomach, doubtless of a nervous nature, for which blood was drawn. During the following winter he had some slight returns of the pain, and again lost blood, and his nervous mobility doubtless thereby augmented.

April 2d, 1732.—He went to bed in perfect health, was awakened next morning with a pain much like the former, though neither so exquisite nor equally sharp but that he could make a shift to put off with it, and even at some intervals sleep a little till ten next morning, when all of a sudden it became so violent as to force him instantly to call out for his old cure, a plentiful bleeding, on which for some minutes he felt himself entirely relieved, but soon after complained of a strange anxiety, difficult breathing, coldness of his extremities, and convulsions of the diaphragm.

I saw him before eleven, when I found his pulse much oppressed, very irregular, and often intermitting; his extremities chilled; his breathing almost suffocated, fetching heavy sighs, and very often looking ghastly; spouting saliva frequently, and roaring out. . . . He was immediately bled, and seemed, for five minutes, somewhat relieved; then, all of a sudden, his extremities became cold and rigid as of a dead body, his pulse at no rate to be felt; immediately he cried out that everything was turning round him with strange rapidity. Soon after that he scarcely saw the objects, but imagined himself in such a motion. At last saw nothing, and quite bereaved of all his senses, raved in the most extraordinary manner, often starting up, and tearing everything about him; spouting perpetually great quantities of water, ready every moment to be choked in his breathing, making no complaints of his former pain, but crying out, in the most pitiful manner, how he was abandoned by all, and left among flames that were consuming him, vowing eternal vengeance on all that had so used him.

The tone of his voice often changed; he had convulsions, frequent in his face. . . . He had some intervals during that extraordinary shock, and called instantly for drink; but the moment he saw it, fell into the most surprising horrors, and, as it approached him, started, looked frightened, had frequent convulsions, especially about his mouth, and peevishly put it away with his hand; and then, with an air that spoke at once fright and resentment, he would stare after the drink, and soon after impatiently called for it, and repeated the same scene.

After the last bleeding, finding himself more than ever before relieved, he called hastily for a little warm milk and water: he greedily glutted a mouthful, and that very moment with great force spouted it at a great distance, and, after it, an incredible quantity of saliva, in the same manner, with the same force; and very frequently telling that, notwithstanding all his burning thirst, to swallow it was impossible, nor could he, without a kind of horror, hear of any kind of drink.

The other case occurred in January, 1848, in the Military Hospital at Mustapha—*a colony and climate in which rabies is unknown.*

CASE.—The patient was a soldier in the Commissariat Department. On admission into the hospital, his face was red, his eyes brilliant and eager, and his pulse full and tumultuous. He complained of a severe headache and distressing irritation in the throat. Bleeding was practised, and, at first, with the result of tranquillizing the patient. When, however, water was brought to wash the arm, he suddenly made a summersault backwards, and twisted the head violently from side to side. A few minutes later, he leaped out of bed, and hid his head in the coverlet. Light distressed him very much, and at the sight or sound of

water, the convulsions were renewed. At first, there were quiet intervals, in which he warned the bystanders away, for fear lest he should bite them; but these intervals rapidly grew shorter and shorter, until they disappeared altogether, and the patient died in the course of the night in frightful agony.

On examining the body, no evidence of any bite could be discovered, and the history of the patient was equally silent. On further examination, some little effusion of serum was found in the ventricles, and some congestion of the upper surface of the anterior part of the right cerebral hemisphere. The stomach, also, and the mucous membrane of the fauces were deeply congested, and the tongue presented prominent lentile-like vesicles at its base, and along its sides.

"One link only is wanting," writes Dr. Kemp, "in the chain of proof that decidedly assigns hydrophobia a place among those convulsive diseases of the nervous system produced by moral causes, and that is, cases of well-developed hydrophobia that have been cured by the application of a moral remedy. Many very decided cases of this might be brought forward. Perhaps, however, the following, for the correctness of which, we vouch, may suffice."

CASE.—A gentleman, of gentle disposition, and somewhat refined habits and pursuits, who possessed decidedly the mobile mental constitution, met with a very severe domestic calamity, which greatly depressed his spirits, and increased this mobility. He was bitten by a dog that was violent and delirious, and supposed to be rabid (it was destroyed). This wound was well cauterized. Some weeks afterwards, strong excitement and convulsive movements came on, he believed that he could not swallow fluids, and his alarm and excitement became fearful. Fortunately, he was seen by a medical man who had very strong suspicions of the "moral" nature of hydrophobia; and he requested a distinguished veterinarian of his acquaintance to interfere. This gentleman visited him, and found him in a state of extreme excitement: he made use of a pious fraud, and assured him that he could not possibly have hydrophobia, because the dog that bit him had certainly not rabies, but some other disease. The patient anxiously inquired if he was sure, and on the statement being emphatically repeated, the excitement passed away, the convulsions ceased, he fell asleep, and in a little time awoke quite well.

1. *Cases of Phlebitis, with Pneumonia and Pleurisy, from chronic disease of the Ear.* By Dr. GULL, Assistant-Physician to Guy's Hospital. ("Association Journal," 13th April, 1855.)
2. *Clinical Lectures on the pathology and treatment of affections of the Ear.* By Mr. TOYNBEE, F.R.S., Aural-Surgeon to St Mary's Hospital.
3. *Disease of the Ear: death from implication of the pneumogastric nerve.* By Mr. COE, Surgeon to the Bristol General Hospital.

1. Dr. Gull's cases were recently brought before the Royal Medical and Chirurgical Society for the purpose of directing attention to a consequence of chronic disease of the ear, which has attracted little attention, namely, disease of the lungs and pleura. The cases, which are three in number, occurred in Guy's Hospital.

The first case was that of a man, twenty-one years of age, who, after exposure to cold, was seized with rigors, pains in the head, vomiting, and other febrile symptoms. Three days after his admission, he was found to have difficulty in moving the head, with pain extending down the right side of the neck, and it was ascertained that four years before, when working in a coal-mine, he had received a blow on the right side of the head, after which he had discharge of matter from the ear, and had been deaf on that side ever since. The rigors continued to occur at irregular intervals, and symptoms of pleuritis appeared, followed by those of pneumonia and pneumothorax. He died on the ninth day after his admission, and the sixteenth from the accession of the symptoms. On examination after death, the bones of the right ear were found to be carious, but

the brain and its membranes were entirely healthy. The right lateral sinus and jugular vein were inflamed, and contained lymph and pus, and there was lobular pneumonia of both lungs, with gangrene and pneumothorax on the right side.—The second case was that of a man, fifty-two years of age, who had febrile symptoms and rigors, which recurred daily. A few days after his admission, he was observed to have stiffness and pain in moving the head, and he mentioned that from infancy he had at times had a discharge of offensive fluid from the left ear, and was deaf on that side.—The rigors continued to recur, and he had a slight cough. He died on the twenty-fifth day from the accession of his symptoms, and, on examination, portions of the left temporal and occipital bones were necrosed, the lateral sinus and jugular veins were inflamed, the pleura contained a considerable effusion, and both lungs were in the state of lobular pneumonic condensation, and in places approaching gangrene. The dura mater was thickened, but the brain not materially diseased.—The third case was that of a man, twenty-three years of age, who at first presented signs of low fever; soon afterwards, he had severe rigors, with profuse sweats, and presented the usual signs of pleuro-pneumonia. He had discharge of bloody pus from the right ear, and pain extending down the right side of the neck, and had been nearly deaf for six weeks. He died eight days after his admission, or about three weeks after the accession of the symptoms. On examination, the right ear was found diseased, the occipital bone carious, the dura mater adjacent to it gangrenous, and the brain congested. The lateral sinus contained a clot, in the centre soft and pyriform. In the right pleura there was extensive sero-purulent effusion, and portions of both lungs were in the state of pneumonic condensation and disintegration.

2. Mr. Toynbee calls attention to the same subject through another channel, in a recent clinical lecture at St. Mary's Hospital, and his remarks are of much interest. Disease in the mastoid cells, he tells us, may terminate fatally from purulent infection arising from the introduction of pus into the circulation through the lateral sinus, as well as from disease of the cerebellum, or its membranes, and, before citing the evidence of his own experience, he refers to some former evidence on the subject.

"Dr. Abercrombie," he proceeds, "published an interesting case of purulent infection from disease of the ear; but the subject has been more thoroughly investigated by Dr. Watson, who, although deprived of the opportunity of making *post-mortem* inspections of the highly interesting cases which he has so fully detailed, there remained no doubt in his mind, nor can there be any doubt in the minds of his readers, that the cause of death was the introduction of pus into the system from the mastoid cells. Dr. Bruce has since published some valuable cases bearing upon the subject; and Mr. Wilde gives the details of a case in his work on the Ear. The facts brought forward by these gentlemen, coupled with those I shall lay before you as the result of my own experience, will, I trust, enable you thoroughly to comprehend the nature and progress of the disease. The following is Dr. Abercrombie's case:"

Disease of the Mastoid Cells; Deposit in the Lateral Sinus; Secondary Deposit in the Pleura.—A young lady, æt. 15, had been liable for six or seven years to attacks of pain in the right ear, followed by discharge of matter; but she had been free from any of these attacks for some time previous to the abscess which forms the subject of the following history. On the 25th of April, 1822, she complained of cold shivering through the day, and in the evening had headache, with pain in the right ear; and these symptoms continued on the following day. On the 28th, she was seen by Mr. Brown, who found her with quick pulse and foul tongue, severe pain in the ear, and slight headache. On the 29th, some discharge took place from the ear, but without relief of the pain, which continued with violence until the following day. On the 1st of May, the pain was somewhat abated in the ear, but had extended over the right side of the head; pulse frequent. General and local bloodletting were employed with partial relief. I saw her on the 3d. The headache was then rather abated; the pulse was frequent and weak; she had a pale, unhealthy aspect, and a look of oppression bordering on coma. The pain was chiefly referred to the parts above

and behind the right ear, where the integuments were painful on pressure, and, at one spot near the mastoid process, felt soft and elevated. A puncture was made at this place with a lancet, but nothing was discharged. Topical bleeding, blistering, &c., were recommended.

4th.—Pulse, in the morning, 148; in the course of the day it fell to 84; looking much languor and exhaustion.

5th.—Dark-colored matter of intolerable fetor began to be discharged from the puncture which had been made behind the ear. The opening here was enlarged; and a probe being introduced, the bone was felt bare and rough over a considerable space; headache much relieved; pulse natural.

6th.—Great discharge from the opening; headache much relieved; pulse 112; complained of some pain in the left side of the thorax; and there was considerable diarrhœa.

7th.—No headache; there was much discharge of fetid matter from the opening near the mastoid process, and a probe introduced by it passed downwards and backwards under the integuments as far as the spine.

8th.—Pain in the thorax continued, and was now so urgent that a small bleeding was employed with partial relief; it could not be carried further, on account of increasing weakness. Pulse 140.

9th.—Said she felt better, and made no complaint of pain; pulse very rapid, and strength sinking.

Died on the 10th.

Autopsy.—Every part of the brain was in the most healthy state, except a small portion on the right side, near the ear, which was of a dark, leaden color; the tinge, however, was entirely superficial. The right temporal bone, externally, was bare through a great part of its extent; internally, it was in many places rough and dark-colored, and there was some dark-colored matter betwixt it and the dura mater. The dura mater at this place was for a considerable space thickened, spongy, and irregular; the coats of the right lateral sinus were considerably thickened through its whole extent, and the capacity of the sinus was very much diminished by a deposition similar to that which occurs in the cavity of an aneurism. The internal ear contained dark-colored matter. The left cavity of the pleura contained fully a pound of puriform fluid; the left lung was collapsed, dense, dark-colored, and covered by a coating of coagulable lymph.

From the examination I have made of deposits in the cavity of the lateral sinus, I have no doubt that the matter alluded to in the above case consisted of coagulated blood mixed with pus.

The following is one of Dr. Watson's cases:

A boy, æt. 11, had had a discharge of offensive, purulent matter from his ear since the time when, four years before, he had gone through an attack of scarlet fever. In August, 1833, he went for a walk into Kensington Gardens, and there lay down and slept upon the damp grass. The next day, he was attacked with headache, shivering, and fever. Strong rigors, followed by heat and perspiration, occurred very regularly for two or three days in succession, suggesting the suspicion that his complaint might be ague; but then pain and swelling of some of the joints came on, and were at first considered rheumatic. However, the true and alarming nature of the complaint soon became apparent. Abscesses formed in and about the affected joints; and one of these fluctuating swellings was opened, and a considerable quantity of foul, grumous, dark-colored matter let out. After about a fortnight, the child sank under the continued irritation of the disease. The hip-joint presented a frightful specimen of disorganization; it was full of unhealthy, sanious pus; the ligamentum teres was destroyed; the articular cartilages were gone; and matter had burrowed extensively among the surrounding muscles. The knee and ankle-joints of the same limb were in a similar condition. Unfortunately, the head was not examined; but that the fatal disorder had penetrated from the ear to the dura mater I entertain no doubt; in all probability the inflammation had involved the veins or sinuses of the head.

Having given another case of a similar nature, Dr. Watson says:

I much lament that, in these instances, the direct link of connection between the disease of the ear and of the disorganization of the joints was not demonstrated, for seeing (they say) is believing. Yet the pain of the ear, the discharge of pus from the external meatus, the subsequent pain in the head, coming on with fevers and rigors, and followed, after a short interval, by destructive supuration in several distant parts, and, in the latter case, the actual femoral phlebitis—these circumstances form a chain of presumptive evidence amounting, in my judgment, to moral certainty, that the fatal mischief, in each case, found entrance through “the porches of the ear;” and that the dura mater underwent inflammation. The same evidence is scarcely less affirmative of the complication of cerebral phlebitis. Perhaps the veins of the diploë, which, in the cranial bones, are of considerable magnitude, were involved in the inflammatory mischief; perhaps the large sinuses of the brain. The close proximity of the lateral sinus to the diseased bone, and its formation by a duplicature of the dura mater, would seem to render such a complication highly probable.

“The direct link of connection between the disease in the ear and that of the circulating system was pointed out by Dr. Bruce, and also in the case cited by Mr. Wilde. In this case, ‘the membranous walls of the right lateral sinus throughout the whole of the mastoid portion of its course, were much thickened, and their lining presented a sloughy appearance, being covered with lymph of a greenish hue, and smeared with unhealthy purulent matter. This condition of the lining membrane extended along the jugular vein and superior vena cava, and within a short distance of the latter into the auricle. The left cavity of the pleura contained about four ounces of a thin, fetid matter.’ In addition to the facts above cited, all that is required is an account of the exact condition of the ear; and this I have supplied in the following case, which occurred to Dr. Heale, at the Free Hospital.”

Pus in Mastoid Cells; Caries of the Lateral Sulcus; Pus in Lateral Sinus; Secondary Deposits.—Harriet G—, æt. 20, was admitted into the hospital on the 9th of March, 1850. She had great fluttering and irregular vibrating action of the heart, resembling erythismus mercurialis, but which subsided in a day or two. She was deaf in the left ear, and had long been subject to intense ear-ache, with occasional fetid discharge from the meatus. She was restless, sleepless, occasionally delirious, and had no appetite. Soon after her admission, an abscess formed just above the left collar bone, which discharged large quantities of matter until her decease. The disturbance of the heart's action returned after three doses of hyd. c. creta, six grains having been given every six hours; but it again subsided in about two days. She then had severe delirium, which abated after a sudden, large, and fetid discharge from the left ear; finally, she had erysipelas, violent delirium, succeeded by coma, and died on the 15th of April.

Autopsy.—A very large excavated abscess, with sinuses in various directions, was exposed at the root of the neck on the left side, communicating with, and extending through, the whole of the carotid sheath. The internal jugular vein was full of matter, which was also found burrowing down in the direction of the vena innominata; a fibrinous clot was found in that vein, extending into the descending vena cava; this being examined by the microscope, was found to contain pus globules. The lungs were filled with a frothy and purulent infiltration, without consolidation; there was a small circumscribed abscess between the pleura pulmonalis and the right lung, but not extending into the substance of the latter. The heart was healthy. The liver was pale-colored. The cerebrum was healthy; the arachnoid membrane in parts appeared smeared over with pus, more particularly in the posterior part, near the falx, joining the tentorium. The tentorium covering the left lobe of the cerebellum was much inflamed, thickened, and had matter between it and the arachnoid, covering that lobe of the cerebellum; and, immediately beneath this, on cutting into the cerebellum, a circumscribed abscess, about the size of a walnut, was discovered. This was nearer the faix cerebelli, than to the outer margin of the cerebellum; the part of the cerebellum in contact with the cranial bones was healthy.

The petrous bone was examined by myself, and reported upon as follows:

The meatus externus contained purulent matter. The glandular and periosteal portions of the membranous meatus were much softer than natural, and they adhered but slightly to the surface of the bone. The bone forming the upper and outer half of the tube, was found to present numerous foramina for the transmission of bloodvessels; they were much larger than natural, and some of them were surrounded by delicate layers of new bone; through the larger of these foramina large bristles could be passed, and they appeared to communicate with canals in the interior of the bone, which were continuous with orifices in the sulcus lateralis at its inner surface. The lateral sinus was of a dark-brown color; the dura mater forming its posterior wall was entire. The sinus was full of coagulated blood, mixed with purulent matter. The dura mater constituting its anterior wall, and which was in contact with the surface of the bone forming the sulcus lateralis, was very thick and soft; portions of it were destroyed by ulceration, and the bone was exposed. The bone forming the sulcus lateralis was of a dark color, and covered by masses of lymph and pus; its surface was rough, presenting throughout numerous orifices and tortuous grooves; this appearance being produced by the almost complete disappearance of the internal table of the skull, which (excepting two scales, each measuring about two lines in diameter) had been destroyed by caries. A carious orifice existed between the cavity of the cerebellum and the mastoid cells. The bone forming the jugular fossa was also carious. There was an orifice in the posterior part of the membrana tympana. The tympanic mucous membrane was much thicker than natural, and in the upper osseous wall were observed a few small foramina for bloodvessels, and a carious orifice of a size sufficient to allow the passage of a small pin.

The mastoid cells at their upper part formed a cavity about the size of an ordinary horse-bean; it contained pus. This cavity communicated posteriorly with the lateral sulcus by means of an orifice three lines in diameter; anteriorly, the orifice into the tympanic cavity was not more than two lines in diameter, and it was placed above the level of the floor of the cavity containing the pus.

Pus and scrofulous matter in the Mastoid Cells; communication with the Lateral Sinus by the Veins; Secondary Deposit in Pleura.—Kitty D—, æt. 15, was admitted, under my care, as out-patient at St. Mary's Hospital, on the 16th of February, 1854. She stated that, six months previously, she suffered from pain in the left ear, which was followed by dulness of hearing in it; as well as in the right ear, and this had remained to the present time, accompanied by a discharge from the left ear. Upon examination of the left ear, a small red polypus was seen at the inferior part of the meatus, near to the membrana tympani; the latter membrane was white; she did not complain of pain in the head. She was ordered gentle counter-irritation behind the ear, and the ear to be syringed with a weak astringent lotion. She remained much the same until March 27th, when she was admitted, in my absence, as an urgent case, under Dr. Sibson, in the hospital. When admitted, she was partly unconscious, was extremely prostrate, and could not speak; the skin was parched; the tongue brown and dry. Pulse 140, very small and thready; pupils sluggish; the left rather more contracted than the right. Upon inquiry, it was found that, three days before, a marked difference was observed in her manner; this was attributed to the pain in the head and left ear, of which she much complained; she was unable to do any work. On the 25th, she kept her bed; on the 26th, she became still worse; and, on the 27th, application was made at the hospital. Upon being seen by one of the officers, she was at once admitted. Stimulants were freely administered, and the patient somewhat rallied; during the night she was very restless, and wandered a good deal.

28th.—Seems quite sensible to all that is done to her, but does not speak; she mutters to herself. Pulse 140; skin hot; but still some moisture is apparent. Loud sonorous rhonchus of right lung; the head is held to the right side; the mouth is drawn to the right; the nostrils are expanded, and there is partial paralysis of some of the muscles on the left side of the face. She was supported by stimulants at the same time that a leech was applied to the neck.

10 P. M.—Very low; surface cold; skin clammy; face livid; subsultus tendinum; pulse feeble and irregular.

29th.—Much as yesterday; rambled during the night; voids urine involuntarily; tongue brown and moist; pulse 140, very small. During the evening very low; voided urine in the bed; muscles suddenly contracting.

30th.—Slept badly; at times wandered much; breathing hurried; pulse 140; nostrils dilated. She gradually became worse, and died at 2.15 P. M.

Autopsy.—Cerebrum firm; ventricles dry; gray substance very dark. Over the left lobe of the cerebellum, at the posterior part of the petrous bone, is a dark bluish portion of the size of half-a-crown. The gray matter of the cerebellum very blue, to the depth of one-eighth of an inch; beneath the discolored spot, the substance of the cerebellum was slightly softened. There were considerable adhesions between the lungs and the pleura costalis; there was also tubercular deposit, covered by an unhealthy, plastic, fibrinous exudation; the pleural cavities contained a pint of fluid. The dura mater forming the posterior wall of the lateral sinus (where it is situated in the temporal bone) was of a dark color, and soft; the sinus contained at its upper part a firm coagulum of dark-colored fibrin; at its lower part it was full of dark-colored pus. The anterior wall of the sinus was attached to the bone much less firmly than natural. The mastoid cells were full of pus and scrofulous matter; their anterior wall presented an orifice about two lines in diameter, which opened into the meatus externus. The incus and the thick mucous membrane around it prevented the pus from escaping. The orifices for the passage of the bloodvessels from the mastoid cells to the lateral sinus were somewhat larger than natural.

It will be observed that, in this case, there was not any caries of the bone towards the cerebellum, and the only means by which the disease from the mastoid cells could be propagated to the cavity of the lateral sinus must have been the veins.

3. Mr. Coe's case is evidently one of remarkable interest, but it is almost spoiled for want of sufficient circumstantiality. It would seem to point to the conclusion that the lungs may become implicated in the cases under consideration through a nervous as well as through a venous channel. In Mr. Coe's opinion, the fatal result in his case was immediately due to irritation of the pneumogastric nerve, more especially of its inferior laryngeal branch. He writes:

CASE.—An out-patient of the Bristol General Hospital came under my care, complaining of running from the right ear, which had existed for some years, and occasional paroxysms of acute pain in the ear and head whenever the discharge ceased for a time, such being the case at the period of application. Leeches were applied to the mastoid process, and warm fomentations to the side of the head, and mercury was given internally. On the next day, symptoms of meningitis having come on, the patient was taken into the house. He progressed favorably for some days; afterwards he began to complain of stiffness and pain in the right side of the neck, and sudden attacks of difficulty of breathing, as if from the spasm of the glottis. There was a distinct rope-like swelling descending from the base of the skull down the side of the neck, in the situation of the carotid sheath; it was very tender to the touch.

The diagnosis was, caries of the posterior portion of the temporal bone, meningitis, obstruction of the right lateral sinus, either from extension of inflammation or from secondary purulent deposit, subsequent coagulation of blood in the internal jugular vein, inflammation of its sheath, with involvement of the pneumogastric nerve, especially the inferior laryngeal nerve (the phenomena of the irritation of this branch being, at any rate, more daily manifested than of any other portion of the nerve).

The correctness of the diagnosis was proved by the post-mortem examination.

It would appear from these cases, that the chest may become implicated in more than one way as a consequence of disease of the ear, and hence another reason for regarding these cases with suspicion, and for treating them with promptness. The fact, also, is of great practical importance, for it naturally prompts us to inquire into the condition of the ear in sudden and serious affections of the lungs and pleura, and suggests a very different treatment, as well as a much more guarded prognosis, in cases where there is evidence of such disease.

Case of Consumption Cured. By Dr. STOKES, Professor of Physic in Trinity College, Dublin. ("Dublin Medical Press," 29th Nov. 1854.)

We put the subjoined case in this place because there appears to be a great practical truth underlying it. For ourselves, indeed, we have been long convinced that all phthisical and scrofulous subjects require a much larger quantity of alcoholic stimulus than ordinary persons, and that one reason, at least, why these cases are so unmanageable is, that this fact is not fully recognized. We will not now enter into any reasons for this opinion, but we will leave Dr. Stokes to tell his own tale.

"Some years ago," he says, "I saw a gentleman, who came to town laboring under all the symptoms of well-marked phthisis. The disease had been of some months' standing, and the patient was a perfect picture of consumption. He had a rapid pulse, hectic, sweating, purulent expectoration, and all the usual *physical signs* of tubercular deposit, and of a cavity under the right clavicle. I may also state, that the history of the disease was in accordance, in all particulars, with this opinion. I saw this patient in consultation with a gentleman of the highest station in the profession, and we both agreed that there was nothing to be done. This opinion was communicated to the patient's friends, and he was advised to return to the country. In about eighteen months afterwards a tall and healthy-looking man, weighing at least twelve stone, entered my study, with a very comical expression of countenance:—'You don't know me, doctor,' he said. I apologized, pleading an inaptitude that belongs to me for recollecting faces. 'I am,' he said, 'the person whom you and Dr. — sent home to die last year. I am quite well, and I thought I would come and show myself to you.' I examined him with great interest, and found every sign of disease had disappeared, except that there was a slight flattening under the clavicle. 'Tell me,' said I, 'what you have been doing?' 'Oh!' he replied, 'I found out from the mistress what your opinion was, and I thought as I was to die I might as well enjoy myself while I lasted, and so I just went back to my old ways.' 'What was your system of living?' said I. 'Nothing particular,' he said, 'I just took whatever was going.' 'Did you take wine?' 'Not a drop,' he replied; 'but I had my glass of punch, as usual.' 'Did you ever take more than one tumbler?' 'Indeed, I often did.' 'How many? Three or four?' 'Aye, and more than that, I seldom went to bed under seven.' 'What was your exercise?' 'Shooting,' he said, 'every day that I could go out.' 'And what kind of shooting?' 'Oh, I would not give you a farthing for any shooting but the one!' 'What is that?' 'Duck-shooting.' 'But you must have often wetted your feet?' 'I was not very particular about the feet,' says he, 'for I had to stand up to my hips in the Shannon for four and five hours of a winter's day, following the birds.'

"So, gentlemen, this patient spent his day standing in the river, and went to bed after drinking seven tumblers of punch every night; and if ever a man recovered from phthisis he had done so when I saw him on that occasion. Suppose, now, that he had been confined to an equable temperature, and a regulated diet, and had been treated in all respects *secundum artem*, what would have been the result? Any of you can answer the question. In point of fact, this very treatment had been adopted during the first three months of his illness, and his recovery may be fairly attributed not so much to the duck-shooting and whiskey-punch, but to the general tonic and undepressing treatment which he adopted for himself, and which his system so much required to enable him to throw off the disease."

Pathological and Clinical Observations respecting morbid conditions of the Stomach.

By C. HANDFIELD JONES, M.B., Cantab., F.R.C.P., F.R.S., Assistant-Physician to St. Mary's Hospital. (London, Churchill. 8vo, pp. 226, 1855.)

This book is based upon a paper contained in the *Medico-Chirurgical Transactions*, of which a good abstract will be found in our last volume (XX.) It does not profess to be a complete treatise on diseases of the stomach, and it only aims at elucidating some comparatively unnoticed points. These points, however, are of very great importance, and we have no hesitation in saying that

the information afforded is of a very high degree of value. The book is well illustrated by plates, and very rich in cases; and the only fault we are disposed to find is one which can be easily rectified in a future edition,—this is the confusion of the cases with the other parts of the text, by the adoption of the same type, and the want of sufficient divisions in many places between the paragraphs. This fault certainly detracts very much from the pleasure with which the book might be read.

The work is arranged in four chapters. The first two are devoted to the anatomy and physiology of the stomach; the last two to the pathology. In the chapter on the anatomy, much attention is paid to the lenticular or solitary glands. These are regarded as having an inverse relation to the specially organized tissues. They are numerous in children, disappear as the stomach acquires the full organized condition of adult life, and reappear apparently when the stomach exhibits signs of a degenerative character. In the chapter on the physiology of the stomach, there is much interesting matter, and that which we should instance as most interesting are the remarks upon the digestive powers of the intestines. We intend to notice these in another place and on another occasion.

The various pathological states which form the subject of the third chapter may be classed under the following heads: (1) Those in which hyperæmia or inflammation is the most prominent feature; (2) those in which the secretion is more or less manifestly morbid; (3) those in which there are chronic textural changes of a wasting character; (4) those in which ulcerations are present. The whole chapter is full of valuable facts and opinions, and especially that part which concerns the chronic changes of a wasting character, in illustration of which we would direct attention to the remarks upon *atrophy of the glandular tubes, with varying amount of fibroid formation*, merely adding our entire concurrence in the opinion of the author. We would gladly have enlarged upon the valuable microscopic disclosures in this and other changes, but we must refer for these to our last volume (XX.)

Speaking of atrophy of glandular tubes, &c., Dr. H. Jones remarks—"There is a group of instances of atrophic change, not well defined, but which yet it seems fit to separate from the foregoing, in which great destruction of the tubes of the mucous membrane occurs. They are, for the most part, replaced by a fibroid or granular matter, much less loaded with nuclei than the new-formed tissue in the class lately described. Some of the following examples are very striking.

"CASE 17.—T. P., male, æt. 62, very anæmic; has generally lived quietly, worked hard, and been a good deal exposed to weather. Was never laid up before this attack, and does not remember having had any previous illness. Six months ago had an accident, not injuring him materially. A fortnight after this, dropsy appeared in the legs. Has had cough, and watery, mucous expectoration some time. Pulse regular, of moderate force. A pulsating tumor is felt above the sternum, towards the right. The heart's apex beats in its normal situation, regularly and with good force. There is a loud, systolic murmur at the apex. The second sound can be heard at the base pretty clear, but attended with some murmurish sound. Higher up, in the course of the aorta, especially near the right clavicle, there is a very loud diastolic murmur, and a systolic also. On each side of the neck the systolic can be heard, but loudest on the left. A diastolic murmur is heard in the upper part of the abdominal aorta. The impulse of the heart is extended; it is felt manifestly over the lower part of the sternum, and in the epigastrium; its dulness extends just beyond the right edge of the sternum. The rhythm is occasionally intermittent. Breath-sound in lungs normal. Liver not displaced. No arcus senilis. The appetite was not very good, and there was occasional diarrhoea, or a tendency to it. He remained in the hospital (St. Mary's) several weeks, and improved somewhat, the anæmia, however, scarcely diminishing, and then went out. Very soon after he caught cold, as he said, and was confined to his bed some time. He returned to the hospital September 20th, much weaker than he had been before, gradually declined, and died October 7th. *Post-mortem*:—There was extreme anæmia. The heart was large, its walls hypertrophied, its tissue of good color. The aortic and

mitral valves were efficient, but rather thickened. The right valves quite healthy. Ascending aorta healthy, but somewhat dilated; some rough calcareous deposits at the entrance of left subclavian. Left carotid came off from A. Innom., which was placed more to the left than usual. Atheroma of aorta not very advanced, but general; some bony plates in one or two parts. Other organs healthy. Stomach: the mucous membrane was generally pale, but tinged yellow by bile, with a few vascular arborizations here and there. Two portions of the mucous membrane were carefully examined, and found to be most gravely altered. In vertical sections no trace of the tubes was to be seen. The basement membrane still existed in some parts, in others it was lost; beneath it was a layer of fibroid tissue, containing at its lower part numerous fat vesicles. After the addition of acetic acid, some remnants of the tubes were brought into view, imbedded in an indistinctly nucleated fibroid stuff. One of these appeared as an imperfect tube, slightly bulged at its lower part, another as an oval cyst, with a short, truncated neck; another as a spherical cyst, containing some granulous matter, and oil molecules. The tube and oval cyst contained only an indistinct granulous, or granulo-fibrous matter. Here was a case of extreme wasting of the secreting structure of the stomach, coinciding with like wasting of the blood, without any apparent cause, and without any symptoms that could excite suspicion of the extent of the lesion. Whether the tubes primarily underwent atrophy, or secondarily, in consequence of the encroachment of interstitial fibroid tissue, seems scarce possible to decide positively. I strongly incline, however, to the former view. The stethoscopic phenomena were very interesting. However it may be accounted for, there can be no doubt that a diastolic murmur was heard both by myself and Dr. Markham, although the aortic valves certainly appeared quite adequate to close the orifice. Possibly the dilated condition of the ascending aorta may have had some share in its production. Though the period of life was advanced, this was clearly but a very secondary 'moment' in the atrophic change. In the following case it is probable that it was more influential.

"CASE 18.—S. E., æt. 90, a nurse in an infirmary, died apparently of old age, having had no other disease, at least recently, except some slight bronchitis. *Post-mortem*:—Much fat under skin of abdomen, and about the viscera. Limbs spare. Heart healthy. Lungs very tolerably healthy, but œdematous, and engorged posteriorly. In the anterior margin of the right there was a mass of grayish induration, over which the pleura was thickened and adherent. Numerous pleural adhesions on both sides. Liver healthy, with some chronic thickening of the capsule. Kidneys atrophied to one-half of their normal size, or less, and highly granular. Uterus enlarged, retroverted; its cavity much larger than natural, and lined with a bloody coagulum. Stomach contracted, except in the splenic region. It contained some thin chocolate-colored fluid, feebly acid. This exhibited, under the microscope, tubular and columnar epithelium, granular matter, and stellar groups of acicular crystals (margaric acid). The mucous membrane was throughout of rather dirty, slaty aspect. Splenic region: mucous membrane appears thinned; a section shows the tubes excessively wasted, débris remaining here and there, with fatty contents, and cystic formations also of large size, and the whole imbedded in a dense woof of fibroid tissue, which is traversed by a great number of remarkable yellowish-red streaks. These consist of colored oil molecules, forming elongated fusiform bodies. The basement membrane remains perfect, but underneath it there is an abundant deposit of oily drops, or fat-cells. Mid region: the tubes are quite changed from their healthy state; groups of convolutions are seen here and there, appearing as if they had lost their external openings. The basement membrane is very perfect, but all beneath it there is a coarse granular and fibroid tissue, containing colloid corpuscles, and abundance of free oil. Pyloric region exhibited some marked mammillation. The tubes were wasted, and their lower ends thrown into convolutions in several parts, while their upper appeared to be obliterated. There was much granular and nuclear deposit under the basement membrane, which was perfect. There were a few massy nuclear deposits. Atrophic change, in this instance, had specially located itself in the stomach and kidneys. There seems every reason to believe that it had been very slow and gradual. It seems

to have come on as a part of senile decay, and never to have manifested itself by any remarkable symptoms. To speak of the changes wrought as the results of chronic gastritis or nephritis, of any degree or kind, seems to me to set up a pure hypothesis; scarcely more warranted than it would be to consider the wasting that affects the thymus, and the suprarenal capsules, as the result of chronic inflammation. Thoroughly do I agree with that great observer of disease, M. Andral, so wide-seeing in his views, and so calm and wise in his opinions, when he speaks as follows with respect to softening of the stomach:—'Certainly it is proceeding on a fair and rational analogy, and not transgressing the laws of a sound philosophy, to admit that, in cases where the principal agents of life—the blood and nervous system—no longer nourish and excite the organs sufficiently, all the vital force of aggregation, by which the different molecules of the living tissues are held together, ceases to possess its natural and physiological intensity; thence the diminished cohesion of these tissues, and their greater or less softening, from the degree where, as is commonly said, *there is flaccidity of the flesh*, to that where the solid, losing the characters of organization, manifests a tendency to return to the liquid state. Thus the transparent cornea becomes softened, and is perforated in animals that are put on a regimen not sufficiently nutritive.'

"What is true of one form of atrophy, is true, no doubt, of others. That inflammation may, and often does, produce atrophic changes, is perfectly true, but I cannot but regard it as a mischievous error, to assume that it is the only, or the most frequent, cause of such changes. Surely, to the unprejudiced observer, the great and wonder-moving circumstance is, that the various tissues retain their endowments, and the organs discharge their functions, amid all the counteracting influences that surround them. Blink the fact as we will, vitality is the supreme overmastering power in the economy, and the most formidable maladies the physician has to oppose are just those which essentially depend upon its decay. Let the constitutional power be sound and unbroken, and we know we can deal with inflammation in most cases successfully; but when the reverse is the case, how much more difficult and discouraging does our task become! There is much more general appreciation of the true character of disease now than in former days, and yet how large is the space, and how prominent the position assigned to inflammation, and the antiphlogistic treatment, in our best class-books, compared with that which is given to other less manifest morbid processes. Inflammation is a term of universal authority; degeneration and atrophy have scarce a place in our vocabulary."

The concluding chapter is occupied chiefly with some clinical observations upon certain functional derangements of the stomach, with respect to which *post-mortem* examination can give but little information. As an illustration of the contents of the chapter, we may take the very good and practical remarks upon catarrh of the stomach, and this must form our conclusion.

"From the analogy of other mucous membranes, and from actual experience, there is ample proof that catarrhal disorder of the gastric mucous surface is the most common pathological condition which is met with. In its early stage, and in its exacerbations, it constitutes a large proportion of the cases which fall under class 1. In its later and less active stages it swells the number of class 2. It appears to have for its opposite the common condition of nuclear interstitial formation, which proceeds so latently. Its exciting causes will be all such as in any way irritate the mucous membrane, whether this effect be produced by indigestible food, stimulants in excess, the atmospheric poison of catarrh, or that of syphilis or rheumatism. Passive congestion and atony of the vessels are the most powerful predisposing. Its anatomical signs may be recapitulated as congestion of the vessels, primarily and principally of the larger capillaries of the surface; the secretion of viscid mucus in varying quantity; and diminution or arrest of the healthy acid secretion. Blood may exude in greater or less amount from the distended vessels, and give a black color to the matters vomited. Sarcine may form in the mucus which covers the surface, and may lie there without producing any symptoms. The unhealthy mucus may be more or less watery; sometimes it is so much so that the viscid character is almost entirely lost. Its quantity is then increased, and it is often discharged in large gushes from the

mouth. This flux, so analogous to that which often takes place from the bronchi, or from the Schneiderian membrane, is the principal symptom of the disease called pyrosis, or, popularly, 'waterbrash.' The most important fact to remember respecting it is that, like bronchorrhœa, it is scarcely ever attended with pyrexia, or any local inflammatory movement. It is a half-passive, half-active flux, to restrain which astringents may be freely given without fear. In the acute period of catarrh there is tenderness at the epigastrium, pain referred to the lower part of the sternum, the left side, or between the shoulders. This pain is increased by taking food, sometimes very notably by hot things more than by cold. In the later period of catarrh, when the hyperæmia has subsided, the pain is more of an aching kind, or a low, sinking feeling, or a sense of uneasiness. Neuralgic pains, dependent on gastric irritation, may be felt in the head and other parts. The irritability of the stomach is not unfrequently so great, that no relief from pain can be obtained until the food is rejected by vomiting. In some cases marked by a red, too clean condition of the tongue, which looks as if denuded of its epithelium, the gastric surface appears to be morbidly sensitive. It is irritated by the least thing, and the digestive power is very imperfect. Still the result of treatment indicates that there exists rather a disordered condition of the nerves of the stomach than any considerable degree of inflammation. There is, probably, at the same time, a persistent erythematous state of the mucous surface, which does not become covered with the layer of mucus, by the exudation of which hyperæmia usually relieves itself. This morbid condition is very difficult of complete cure; it has appeared to me to be especially connected with the nervous temperament. It is not, however, to be regarded as neuralgia of the stomach. Cases of inflammation of the conjunctiva, such as those described by Mr. Tyrrell, p. 29-34, vol. i. of his work, are probably of an analogous kind. Flatulence, to some extent, is of common occurrence in catarrhal affections of the stomach, but it does not occur in the extreme degree that it does in more purely neurotic conditions. The bowels are often confined in cases of gastric catarrh, but I have observed, in several cases where the irritative condition just described has been well marked, that they acted regularly, and that constipation was not produced by the daily administration of opiates. There is nothing characteristic in the urine of gastric catarrh; it is sometimes high-colored; but this seems to be only part of a general febrile movement, and passes away with it. The catamenial discharge is often irregular in females, or there may be amenorrhœa. The tongue has not appeared to me to afford any absolutely certain indication of the state of the stomach, not even in the case just mentioned, where irritability is the prominent feature. I doubt exceedingly the correctness of Andral's statement, that the appearance of red injected papillæ at the apex 'is always in the direct ratio of the intensity of the gastric irritation.' The sensation of thirst varies. I have not often found it very marked, at least in cases which have lasted some time. A sense of 'inward fever' is sometimes complained of, evidently referred to the stomach, or a 'burning pain,' or 'a hotness.' The state of the appetite varies; where there is much pain after taking food it is rather deficient, and very much so when the membrane may be presumed to be in a relaxed atonic state, incapable of pouring out healthy gastric juice. In other cases, where a state of irritation predominates over atony, there is a constant feeling of craving for food, which seems, as the sufferers say, to do no good. The sensation is a false and delusive one, and, if yielded to, aggravates the morbid condition. It cannot be appeased by fresh excitation, but is to be met by sedatives. The association of gastric with bronchial catarrh is very frequent, and one very common cause of relapse is 'having taken a fresh cold.' The matters vomited in gastric catarrh will, of course, vary according to the pathological condition of the organ, and the kind of food (if any) that has been taken. If the vomit consists chiefly of ingesta, mingled with a non-tenacious acid fluid in moderate quantity, not fermenting, and not containing sarcinæ, the case is probably one rather of irritability of the organ, than of catarrh. In acute catarrh the vomit is acid, and contains a good deal of tenacious mucus, together with watery fluid. When there has been much hyperæmia, the fluid may be of a brownish tint, and show, under the microscope, remains of blood-globules or masses of orange pigment. The tena-

cious mucous plasma often presents the appearance of fibres, just as mucus from other parts does, when treated with acetic acid. Numerous nuclei from the cells of the tubes are seen imbedded in it, and sometimes even the cells themselves, more or less altered. Composite nuclei, in large masses, are sometimes present, exactly resembling those of pus or mucus corpuscles, and I have in one case been able to restore the original corpuscles by adding solution of carb. of soda. I do not, however, think that these corpuscles are formed in the stomach. I rather believe them to proceed from the pharyngeal follicles, and to be mingled with the gastric fluid, just as epithelial scales from the mouth or œsophagus often are. Neutral or alkaline watery, colorless vomit, if habitual or frequent, is indicative, I believe, of a chronic catarrhal state, with, not improbably, a degenerated condition of the mucous membrane, or considerable depression of the general power of the system. Sarcinæ are not unfrequently found in the vomit of chronic gastric catarrh; but the fluid has not the peculiar frothy, fermenting appearance, and there are no special symptoms.

"When stomach catarrh is attended with much irritability of the mucous membrane, the mental condition is evidently affected. The irritation conveyed to the brain by the pneumogastric betrays itself by an anxious, morose, petulant, or fearful temper, which may often aid the observer in appreciating aright the morbid state. On the other hand, the influence of mental conditions upon the stomach is very great, and may be an insuperable cause of disorder.

"The foregoing remarks are only intended as an outline of the symptoms generally observed in the varieties of gastric catarrh. To enter more into detail would be not to the purpose I have in view, and has been done completely by others. What I wish to do is, to present a somewhat clearer and simpler view of a very varying and sometimes puzzling complex of symptoms, by contemplating them with reference to known pathological states. I wish the reader not to think so much of dyspepsia, whether atonic, inflammatory, or irritative, but of a state of the mucous membrane conveniently expressed under the term catarrh, and passing through all the stages and presenting all the varieties which it does in other situations. A little reflection on a common nasal catarrh will help us a good deal to understand the varying phenomena of gastric catarrh."

Dr. H. Jones then proceeds to give some illustrative cases, but we must not follow him any further. We have said enough, however, to show that we consider this volume a valuable contribution to the stores of medical knowledge, and we would strongly recommend it to the attention of our readers.

1. *Registrar-General's Quarterly Return of Deaths in England and Wales during 1854.*

2. *Weekly Reports of Births and Deaths in London during 1854.**

These important documents are of so much interest to the profession, and contain so much valuable information respecting many questions of vital interest, that they cannot be too frequently brought under notice, or examined with too great care.

Having, in two previous volumes, enlarged at some length upon the interesting subject of these official reports, in conformity with this annual custom we again proceed to notice the sanitary condition of England and Wales during the past year. This task is always useful; whilst the interesting facts contained in these instructive quarterly and weekly returns, besides being amply deserving of perusal, supply numerous authentic data for other investigators to deduce varied and highly important practical conclusions.

Throughout England and Wales, the aggregate deaths from all diseases was considerable during 1854: greater, indeed, than in any previous year. The total number being 438,239, or 16,464 more than in 1853; thus making near 4 per cent. of an increase. As, however, the births were unusually numerous, or actually 634,506, which gives 22,165 more than in the preceding year, the actual increase of population was larger in 1854 than in the former twelve months, although the gross mortality had augmented. This fact is consolatory, and how-

* We are again indebted to Dr. Webster, F. R. S., for the report on this interesting subject.

ever severely some epidemic maladies recently prevailed in many districts of Great Britain, viewed as a whole, the calamities hence produced, seem, in reality, neither so general nor appalling as the fears of many persons at first led them to imagine. It is also further worth mentioning, notwithstanding the great mortality of 1854, the excess of births over deaths was really greater than during 1853. In the latter year, the actual amount being 190,566; whereas, during 1854, the rate reached 195,267; this increase, however, became considerably diminished, with regard to its effect in augmenting the population, through extensive emigration.

Viewed in reference to season, some discrepancy respecting the number of deaths prevailed in the different quarters, but nothing very remarkable: the lowest mortality having occurred during the spring, or second quarter, when only 102,666 persons died. The next lowest period was the fourth quarter, or last three months of the year, which gave 109,664 deaths. Then the months of January, February, and March, when 111,970 deaths were reported. Lastly, the third quarter, which comprises such warm months as July, August, and September, occupied the highest position in the mortuary scale; seeing the aggregate amount of cases terminating fatally from all diseases reached 113,939, being, however, considerably under the mortality experienced during the parallel months of 1849, when cholera likewise prevailed epidemically, and with great virulence, throughout England. In the quarter last mentioned, 135,327 deaths were reported, being therefore 21,288 more than during the corresponding quarter of 1854, although cholera was also then present; and irrespective, likewise, of the recently increased population; which fact ought always to be taken into calculation. Consequently, every collateral circumstance considered, the particular season under discussion, notwithstanding its great numerical rate of mortality, cannot be placed upon an equality with that of 1849, as proved by the figures just quoted.

Such were the general results characterizing different quarters of last year in regard to their respective position in the mortuary scale. With one or two exceptions, all years, besides 1849, the third quarter has generally proved the most healthy season in Great Britain. The greatest contrast, if compared with previous corresponding seasons, being that exhibited during 1845, when the total deaths throughout England and Wales during the parallel months, viz.: July, August, and September, were only 74,872, being therefore 60,355 fewer fatal cases of disease than in the corresponding quarter of last year: hence showing a marked salubrity in the former period, the total mortality being then about half its recent amount. Considered, however, in the aggregate, the annual rate last year was 2.354 per cent., which makes .088 above the average. In town districts the scale of deaths ranged higher than in country localities, the actual amount in the former being 2.816 per cent.; whereas, in the other, or rural districts, it was 2.026, or nearly $\frac{1}{2}$ per cent. lower; thus making an important difference in favor of rural populations.

According to the figures reported in a previous paragraph, the public health was such that the mortality of England and Wales during the first quarter of 1854 ranged somewhat below the average amount of last year, and especially much less than either during the corresponding periods of 1847 or 1848, it being under that in 1853 by 6271 deaths; thereby showing the first three months of last year were not unusually insalubrious. Descending, however, to particulars, it appears, from the reports heading this article, that the inhabitants of the south-eastern portion of England enjoyed an average amount of health. Nevertheless, in some places this was certainly not always the case; for instance, at Maidstone and Sandgate, scarlatina prevailed to some extent, and the deaths were in consequence augmented. The season proved also unhealthy in Tunbridge; whilst at West Ashford, an increase of deaths was caused by the prevalence of hooping-cough, typhus, and diarrhœa. In Portsea Island, the mortality became also augmented, small-pox being prevalent; and at Southampton the deaths likewise exceeded the average, partly from variola; 26 deaths having occurred from that disease, then very prevalent in this town. Reading also experienced a greater number of deaths than in any preceding quarter; whilst at Windsor, the mortality similarly exceeded an average. The counties of Buckingham and Hunting-

don enjoyed unusual exemption from fatal disease; but scarlatina prevailed in Peterborough, smallpox at Willington, Bedfordshire, and pertussis was fatal at Ampthill. Typhus prevailed at Weston and Carlton, in Cambridgeshire; although Ely and Newmarket were both more healthy than ordinary. The county of Essex exhibited an extraordinary high rate of mortality; many persons, especially infants, having died at Orsett, from influenza and bronchitis. Typhus was also very prevalent at Halstead. In Braintree, numerous deaths supervened from fever and hooping-cough. At Dunmow, measles and pneumonia rendered the mortality greatly beyond an average; whilst at Saffron Walden, measles, fever, and hooping-cough raged extensively.

From Suffolk and Norfolk, the sanatory reports were generally favorable: the mortality of these two counties having ranged below that of any similar quarter in previous years. Throughout the southwestern parts of England, speaking generally, the same satisfactory condition of public health was noticed. Exceptions to this rule, however, occurred, as for instance, typhus proved fatal at Highworth, in Wilts; pneumonia and bronchitis prevailed extensively in Exeter; whilst St. Peter's parish, Plymouth, experienced an excessive rate of mortality, particularly from cholera and small-pox. At Liskeard, in Cornwall, pertussis caused many deaths, besides which disease, scarlatina and measles were very prevalent in Redruth. Yeovil, in Somerset, proved very unhealthy for young children, where, out of 60 deaths registered, 44 occurred in patients under 2 years of age, all of whom died from affections of the respiratory organs, and hooping-cough. The counties of Gloucester, Hereford, and Salop, on the whole were healthy; but Stafford, Worcester, and Warwickshires, exhibited an augmented mortality, compared with the corresponding quarter of last year. Scarlatina prevailed in Dudley, Stoke-upon-Trent, and in Wolverhampton. Measles proved severe at Bilston, variola at Droitwich; whilst in Birmingham, the deaths exceeded the average; the mortality being very great among young children, especially in the Lady Wood district, where, out of 189 fatal cases from all causes, 90 died under 5 years of age. Scarlatina attacked many persons in the counties of Nottingham, Derby, and Lincoln; particularly in the place last named, where this eruptive disease assumed a more malignant character than usual, and proved exceedingly fatal. In one portion of this locality, 50 persons out of 94 deaths arose from that malady. In another district, it likewise raged severely, along with asthma, bronchitis, and pneumonia. In fact, throughout the entire city, there occurred a great increase in the total mortality during this, if compared with previous quarters. The town of Nottingham was also very unhealthy, the deaths being beyond an average, even of several previous years. The same remark applies to Worksop and Southwell, where scarlatina likewise raged fatally. In Chesterfield, Bakewell, and several other towns of Derbyshire, this eruptive complaint was equally prevalent, and caused numerous deaths.

Some parts of Cheshire suffered much from similar causes. For instance, in the Marple district of Stockport, the mortality was nearly twice the average amount of corresponding previous quarters, scarlatina and typhus having prevailed to an unprecedented extent. In other parts of Stockport scarlatina was also exceedingly virulent, being the prevailing epidemic. In Runcorn, out of 97 deaths, 20 were caused by hooping-cough. Throughout most northern divisions of England, the chief feature, during the quarter now under discussion, appears to have been the prevalence of scarlatina, as also of measles in several districts; whilst at Wigan, the deaths were increased by colliery explosions, especially at Ince Hall, where 86 persons lost their lives thereby; consequently, forming one of the most fatal accidents of this description which has ever occurred. Otherwise, few circumstances worthy of remark were noticed, or, in the principality of Wales, which, as a whole, proved of an average salubrity.

During the three months of April, May, and June, the gross mortality ranged under that recorded in any other quarter of the year, as previously mentioned. In this favorable aspect, Kent occupied a prominent position; that county, as also Berkshire, having enjoyed more than usual exemption from any fatal disease. Hampshire was, however, rather different; the deaths being somewhat, but not remarkably, in excess. Southampton continued to be affected by variola,

as in the early part of this year; which, subsequently, however, abated. *Portsea* Island also suffered much from small-pox; the disease having been propagated by mothers and nurses, according to the local registrar's report, purposely taking the children into infected houses. In the county of Hereford, the mortality ranged low; as also in parts of Cambridge; but it was rather high in Northampton, and Bedford-hires. Typhus prevailed in the parishes of Westbury and Finmere; whilst small-pox was very prevalent in Peterborough. In some districts of Bedfordshire variola was likewise very common, as for instance, at Luton, and Leighton Buzzard; being, however, chiefly met with amongst the lowest classes; and the victims in almost every case, were persons in whom vaccination had been entirely neglected. Some parts of Essex proved decidedly unhealthy, as, for example, Orsett; in which, scarlatina, ague, bilious fever, and dysentery were prevalent; malaria, which infects this district, from the undrained *Thames* marshes, being unusually virulent. Suffolk and Norfolk experienced a reduced rate of mortality; although small-pox prevailed at Norwich, and in other districts of the latter county, where the poor and uneducated continue still extremely averse to having their children vaccinated.

Throughout the southwestern portion of England, mortality ranged low, the number of deaths having fallen considerably. Nevertheless, some exceptional localities existed, such as St. Ives, and Marazion, in Cornwall, where measles were fatal to children; whereas, at Stogumber, Somersetshire, small-pox was very prevalent. Again, at Bath, diarrhoea and dysentery caused several deaths in the workhouse. At Wem, in Shropshire, scarlatina prevailed; and so severely in one family that the whole children, 6 in number, fell victims to that malady. Stoke-upon-Trent exhibited a mortality much above the average, chiefly from scarlatina; this disease being also common in Cheadle; whilst numbers died from measles at Wolverhampton, both these maladies having raged extensively. In Birmingham generally the deaths exceeded an average, especially amongst children; measles, pneumonia, scarlatina, and pertussis, having been the most frequent and fatal diseases.

Similar to last quarter, Lincoln proved again unhealthy; scarlatina having been very prevalent, and in many cases fatal; measles was also common, but the augmented mortality arose principally from the former complaint. The same remark applies equally to several districts of Nottinghamshire, as, for instance, at Basford; where, malignant scarlatina and measles were epidemic; the first-named disease being remarkable for its very frequent termination in anasarca. Some parts of Derbyshire also suffered from scarlatina; but Cheshire and Lancashire enjoyed an average condition of health; although in Liverpool, the mortality was high, owing to the extensive prevalence of measles; which proved also fatal in some parts of Salford. Manchester seemed generally salubrious; but in Bolton and Bury the deaths were much below an average, this ameliorated state of public health being attributed to the mildness of the season, and, also, to great improvements recently effected by public authorities, in carrying out sanitary measures. The mortality recorded in Yorkshire was considerable; Leeds having suffered severely from measles; the total deaths by all causes being nearly one fourth more than usual. Scarlatina prevailed much at Rotherham, Thorne, Selby, and also at East Stamford Bridge; where, the deaths from all causes were double the usual number. The same eruptive complaint likewise raged to some extent in the North Riding; whereby considerable mortality ensued, chiefly among young people. In the northern parts of England, the amount of deaths did not differ much from an average rate, although Kendal suffered from variola. On the other hand, throughout Wales, the aggregate deaths were rather beyond the usual number; scarlatina having prevailed at St. David's, and Abergavenny, with measles at Cardiff; where out of 263 deaths by all diseases, 68 actually arose from the last-named malady; and, although typhus prevailed more than ordinarily in the neighborhood of Llanrwst, few cases terminated fatally.

During the third quarter of 1854, ending in September, the mortality, as already mentioned, proved unusually great; 21,607 persons having died beyond the total number registered in the corresponding three months of the preceding year; the rate having, therefore, risen to 2.425 per cent. annually, or 285 more than the

average; the largest proportion however being reported from the chief towns. Throughout most of the southeastern parts of England, the deaths exceeded an average, chiefly in consequence of cholera; although Sussex and Hampshire, with the exception of Portsea Island, and Southampton, scarcely exhibited an increase; small-pox having proved very fatal in the first-named locality. In the marshy districts of Essex, north of the Thames, a high mortality prevailed, principally from cholera, as also at Ipswich; but this was the only district of Suffolk that suffered considerably. The deaths were numerous in Yarmouth on the Norfolk sea-coast; and in Norwich, they amounted to 643 from all causes instead of 370 during the corresponding quarter of the previous year.

In the southwest, such as at Salisbury, Dorchester, and Exeter, some increase in the deaths was recorded; but in several sub-districts of Plymouth, the mortality ranged below an average. It was also under, or about the usual rate, in the counties of Hereford, Gloucester and Salop; whilst in Birmingham, diarrhœa proved exceedingly prevalent and fatal. In Walsall, the mortality was also very great, the deaths being double the average of corresponding quarters; chiefly from measles, scarlatina, hooping-cough, and diarrhœa. The counties of Leicester, Rutland, Nottingham, and Derby, were generally healthy; the number of deaths being below an average; whilst in the low districts of Lincolnshire, the mortality exceeded any ordinary rate, being about one-third more than previously: seeing it rose from 1581 to 2092 within the county. This increase was occasioned by cholera at Grimsby, scarlatina and diarrhœa at Stamford, malignant scarlatina at Bourne, as also at Horncastle; and cholera in Holbeach; besides which, Gainsborough suffered much from scarlatina, where this disease proved very fatal amongst young persons.

Cheshire experienced less than the average mortality, excepting Runcorn and Wirral; cholera and diarrhœa having been very prevalent in the former place, and chiefly during September, when all the cholera deaths occurred; generally in localities where the sewerage was deficient, houses ill-ventilated, and with privies close to the doors in many instances. At Liverpool, the total deaths were more numerous than during several previous corresponding quarters, having amounted to 4563 instead of 2701 in the former autumnal season, this increase being referable to epidemic cholera. In Salford, diarrhœa caused numerous deaths among children; many of whom, it is stated, had no medical attendant. Diarrhœa was also very prevalent in various districts of Manchester, and in some localities almost exclusively, among children, as, for instance, in Deansgate sub-district, where, out of 81 deaths by diarrhœa, only two were adults; hence, showing the infantile mortality by this disease to be frightful. A somewhat similar observation applies also to the London Road division, in which district, out of 289 deaths by all causes, about one-fourth arose from diarrhœa; 47 of these cases being less than one year, and 17 under 2 years of age. In Lancaster, the deaths were likewise above an average number, owing to cholera in Poulton, and typhus at Heysham.

Throughout Yorkshire, the mortality ranged about an ordinary amount; although Sheffield suffered to a certain extent, from the prevailing epidemic. In Bradford, the deaths were also considerably more than usual, owing principally to scarlatina. Hunslet likewise exhibited an augmented mortality; measles, diarrhœa, and dysentery having proved fatal to many children; since, out of 195 deaths from all diseases, 60 victims were less than 12 months old, and 52 were aged one, and under two years.

At Kelmsley, in the North Riding, scarlatina proved very prevalent and fatal, whilst the deaths in Northallerton exceeded in number that of the last four years. In Durham, public health was also far from satisfactory, the deaths being greatly above an average amount; diarrhœa, scarlatina, and measles, having proved very prevalent and fatal. Monkwearmouth likewise manifested a similar condition, the deaths being far above an average, or about one-half greater, arising, it is reported, from the want of clean, properly ventilated rooms, and owing to the accumulation of filth in confined yards; whilst the thorough scavenging of back streets had been neglected. In Monmouthshire, measles, typhus, and scarlatina, caused considerable mortality; whilst in Wrexham the latter disease was also very prevalent, having caused nearly half the total deaths in one of its

districts. Again, at Llanrwst, although this affection proved very common in its vicinity, the number of fatal cases was small comparatively. A curious fact respecting the same epidemic further deserves record, namely, measles spread to almost every house in the neighborhood, travelling almost constantly from a western to an eastern direction, and sparing but few juniors, although not many suckling infants contracted the malady.

Throughout the last three months of 1854, fewer deaths occurred than either during the previous, or first quarter of the year, as already reported. Nevertheless the mortality rose above an average in some districts. Thus, in several parts of Kent, such as Gravesend and Tunbridge, scarlatina proved of unusual severity. In Portsea Island the fatal cases were also increased, scarlatina and fever having been very prevalent; whilst in one sub-district of this part of Hampshire, namely Landport, out of 267 deaths by all causes, 71 arose from scarlatina, the victims being chiefly children. In Hendon and Edmonton, Middlesex, scarlatina proved also very prevalent and the deaths numerous, having assumed in the latter locality a very malignant type, and in almost all cases dropsy supervened. Royston, in Hertfordshire, suffered much from variola; and in Wycombe the deaths reached considerably above an average, principally in consequence of cholera and scarlatina. Oxford was also far from healthy, cholera and scarlatina having proved both prevalent and fatal in many instances, 80 deaths by each of those diseases being reported during five months. Kettering, in Northamptonshire, likewise exhibited a striking increase of mortality, or upwards of double that reported during the corresponding quarter of last year: which result was due to scarlatina and measles; those diseases having then become unusually fatal among children. Some localities of Bedfordshire suffered severely from scarlatina maligna, typhus, and small-pox; the latter disease affecting Luton, the former Biggleswade.

Cambridge was also unhealthy, the deaths being much above an average, owing to scarlatina and small-pox. Scarlatina likewise proved very prevalent and fatal among children at Newmarket; whilst at Wisbeach the mortality ranged above an average, arising from that disease and typhus. Cholera prevailed fatally in some districts of Essex; and in Ipswich the mortality rate was augmented, chiefly by measles and small-pox; besides which typhus and scarlatina were prevalent in several parts of Norfolk. In Amesbury and Lisbury, Wilts, the last-named malady raged also very fatally, three children in one family having died thereby. Shaftesbury and Blandford, in Dorsetshire, both exhibited an augmented mortality, principally from scarlatina; whilst in Weymouth the deaths were excessive, diarrhoea, pertussis, and variola, having been very prevalent and fatal. In Plymouth, the fatal cases exceeded an average, principally from scarlatina, diarrhoea, and small-pox, the former malady having also carried off many children in Stoke Damerel. Truro experienced nearly double the average number of deaths, many children having died from whooping-cough; typhus also prevailed to a great extent; but Redruth, likewise in Cornwall, was healthy. Taunton suffered from an augmented mortality, owing to scarlatina in a severe form; pertussis and typhoid fever being at the same time prevalent. Bath, on the other hand, was distinguished for its healthiness. Bristol, with the exception of cholera in some of its districts, was also healthy; but Clifton proved the reverse, in consequence of diarrhoea and cholera, which caused many deaths. In one family of 8 persons, dwelling near the River Avon, all were so attacked, whereby both parents and 4 children died. In Wem, the deaths, as before, again ranged considerably above an average, occasioned by measles, which disease, as also scarlatina, made the mortality rather greater than usual in Wellington. Uttoxeter, in Staffordshire, proved unhealthy, the deaths being above former rates, in consequence of scarlatina, which raged severely and fatally. The sanitary condition of this town being further rendered bad from slaughterings, as also by the butchers boiling down their offal, and keeping it in stock to corrupt and putrefy, for the purpose of feeding swine, whereby the air became, it was said, constantly tainted. Wolverhampton suffered considerably from diarrhoea and cholera, 68 deaths, out of a total mortality of 215, having arisen from these two diseases in the sub-district of Willenhall; nearly all the cases being among poor persons dwelling in very filthy parts of this township.

Walsall and Dudley both exhibited a mortality above the average, owing to fever and cholera, especially in the latter town, where, in one sub-district, out of 369 deaths by all causes, 87 arose from cholera and diarrhœa. A similar remark applies to Worcester; and at Coventry the mortality was also in excess, scarlatina, measles, and bronchitis having affected residents with considerable severity. Throughout many districts of Lincolnshire, scarlatina also prevailed with remarkable severity, numbers of persons having died by this epidemic, which often assumed a highly malignant character. Indeed, judging from the various official reports, this malady seems to have raged almost like a pestilence, especially amongst town populations. The same disease likewise proved very fatal in East Retford, at Bersford, in the county of Nottingham, and at Ashborne, in Derbyshire, where it killed many children. In Liverpool, the deaths were increased, chiefly from cholera and diarrhœa, numerous such cases having occurred in the workhouse. Prescott also experienced an augmented mortality, cholera, and especially typhus, having proved very severe in the St. Helen's district, 145 fatal cases being reported by the latter disease out of 350 deaths from all causes.

Like many other localities, scarlatina raged with great virulence and fatality in Chorlton, as also at Salford; and in Manchester this severe epidemic malady was likewise very prevalent, being often of a malignant type, and exceedingly rapid in its progress. Typhus and scarlatina prevailed in some parts of Blackburn, and also in Preston, where the former disease occasioned many deaths. Bradford was generally healthy, the mortality being below an average; excepting in the sub-district of Thorne, which suffered much from measles and scarlatina. The latter disease was equally prevalent in other divisions of Yorkshire, as at Dewsbury, Barnsley, Penistone, Ecclesall, Brierlow, and Thorne, in each of which places the mortality was in excess; whilst at Doncaster, measles often proved fatal. In Stockton-upon-Tees, the deaths were considerably above an average, measles, scarlatina, and typhus, having prevailed extensively. In Durham a great amount of sickness was also experienced, measles, fever, and scarlatina having carried off many victims: whilst cholera occurred in the colliery district of Willington. Again, in Easington, Houghton-le-Spring, Gateshead, and Chester-le-Street, measles were prevalent, being often fatal, and frequently followed by inflammatory pectoral affections. Lastly, Newcastle suffered considerably from this complaint, accompanied with pneumonia, which was also very prevalent in Tynemouth. Scarlatina, on the other hand, proved very rife in Penrith and Cockermouth, where the number of deaths was double the average. Appleby was also unhealthy from the prevalence of scarlatina; whilst measles raged very fatally amongst children in Whitehaven. Similar to events in the north of England, both these eruptive maladies now named prevailed as epidemics throughout the principality of Wales, especially at Wrexham, Hollywell, Monmouth, Newport, Crickhowell, and Cardiff, in all of which localities the deaths exceeded an average; whilst typhus proved frequent, although not fatally, in Llanrwst; but at Brecknock the mortality was nearly double, owing to a severe visitation of cholera in the filthy, ill-drained district called Bailey-glaes, which forms part of St. John's parish, thereby showing that here, as elsewhere, this epidemic always selects the most insalubrious situations.

Viewed generally, the sanatory condition of England during the year 1854 seems to have been very far from satisfactory. Two features were, however, highly prominent; first, the great prevalence of scarlatina throughout the country, which caused many deaths; and secondly, the recurrence of cholera in a very severe form during the months of July, August, and September. The total deaths by cholera during this quarter being 15,587, and by diarrhœa 11,135; thus making an aggregate of 26,722 from these two epidemic diseases. The late outbreak consequently exhibited less intensity than in 1849; and although the fatal cases by diarrhœa have been recently as numerous, the actual deaths from cholera were 28,234 fewer than during the same three months of that year. Hence the mortality from both maladies was under one-half compared with the number in 1849, and shows the greater mildness of the late attack, seeing the total deaths by cholera and diarrhœa amounted to 54,472 during the corresponding quarter of that year. Speaking generally at present,

it may be stated that cholera occurred in every county of England excepting Westmoreland, Hereford, and Rutlandshires; but many districts escaped, whilst a few, such as Merthyr Tydvil, in South Wales, suffered severely. Diarrhœa caused numerous deaths in Manchester, Birmingham, and other districts, where few fatal cases of cholera were reported to have occurred, although it is suspected by impartial observers that a majority of the above instances registered as diarrhœa were modifications of choleraic disease. This important question requires careful investigation, and if the suspicion implied is unfounded, it should be disproved; as heretofore, Birmingham has always been considered to have escaped any visitation of cholera, which caused great devastation in many other towns, whilst it was said to have spared this favored central, and usually very healthy, although populous, locality.

Liverpool was also attacked by epidemic cholera; but not nearly to the same extent as in 1849. During the third quarter of that year 4545 persons died by cholera, and 811 by diarrhœa; whereas, in the corresponding three months of 1854, cholera had only 953 victims, and diarrhœa 695; the deaths by the former malady being only one-fifth its previous rate: whilst, from the latter disease, the mortality was less by one-seventh. Taking every circumstance into consideration, the public ought to feel thankful that the recent visitation proved so comparatively mild; and if contrasted with that which afflicted other countries also during last year, Englishmen have additional reasons to be satisfied, and even grateful, the epidemic did not become worse. For instance, in France, about 130,000 persons were carried off by cholera in 1854; and as the population of that empire is nearly double the number in England and Wales, the deaths by that malady, to reach an equal ratio, ought to have been twice their recent actual amount, or 65,000. In fact, the mortality from cholera in England was only half the rate registered in the former country, proportionate to its population. This instructive and important truth ought therefore to become a source of gratulation; and seeing residents in Great Britain have not experienced such an extensive mortality from the late epidemic, as their less fortunate neighbors, whilst commiserating the calamities of other sufferers, whatever may be their creed or country, public authorities ought more assiduously to promote every measure which may either prevent, or tend to ameliorate the effects of future similar visitations.

Analogous to the results observed throughout England and Wales generally during the past year, the mortality recorded in London during 1854, exceeded that met with in any former period, since a correct registration of deaths was established. The only approach in point of numbers being 1849, when cholera likewise prevailed epidemically in the metropolis. During 1854, 73,699 persons died from all causes; whereas, in the first-named year, the numbers amounted to 68,432; thus making an increase of 5,267 in last year's mortality. Compared with 1853, the excess was 12,495 deaths; 61,202 fatal cases of every description having been then registered. With reference to season, the largest mortality occurred in the third quarter of 1854, which includes July, August, and September, when 24,870 deaths were recorded, this result being owing to the prevalence of cholera and diarrhœa; whereby, 13,943 persons fell victims. The next most fatal period was the last quarter, during which 17,238 deaths by all diseases were reported. The first three months of last year occupies the third position in regard to mortality, 16,534 individuals having died during that time. Lastly, the comparatively healthiest season in London was the quarter ending on the 1st of July; seeing only 15,055 deaths were then recorded; being 9,818, or nearly 40 per cent. fewer than during the quarter immediately following. Such were the general results observed throughout the metropolitan districts, in the year terminating on the 30th of last December. To account for, or at least, to discuss this interesting question, will be briefly attempted in subsequent paragraphs.

The diseases which exhibited an augmented mortality first merit notice. Amongst these, after cholera and diarrhœa, which will be investigated afterwards, scarlatina occupies certainly the most prominent position. By this eruptive malady, 3439 persons—chiefly children—fell a sacrifice; of which, the largest proportion, viz., 1297, or nearly 38 per cent. of the whole, occurred in

the months of October, November, and December. By small-pox, a considerable comparative increase was also recorded; the deaths from that often loathsome disease being 676, in place of 217 the previous year. Rheumatic fever and rheumatism also proved more fatal recently; 690 deaths having been thereby produced, instead of 445 during the preceding twelve months; and here again, the majority were reported during cold weather. Measles likewise showed an augmented rate of mortality, 1399 human beings having thus perished, compared with 1007 during 1853, by which disease, however, the greatest proportion, or 476 deaths, occurred in the second quarter.

Croup proved also more fatal, the comparative numbers being 488 against 374 the previous year. *Tabes mesenteria* likewise caused death in a greater number of individuals; the respective amounts being 1099 to 965. Pericarditis occupied a similar position, the deaths recently having ranged 130 against 94. Erysipelas also occasioned more deaths; 448 having arisen from that malady, in place of 324. In addition to which, cephalitis must be quoted; seeing 635 persons recently died by this affection, in place of 573 fatal cases similarly designated; and lastly, from the same category, with some minor exceptions unnecessary to specify, laryngitis should not be omitted; 329 deaths by that disease having been registered, instead of 239 in the former period.

Various maladies which last year exhibited a diminished rate of mortality, next come under observation. Of these, the most marked was bronchitis, whereby, 4549 deaths were recorded, against 5223 during the previous period. Phthisis ranks next, the numbers recently being 7107, in place of 7502 during 1853. Then pertussis, the relative amount being 2471, against 2652 in the former year. Epilepsy was also less fatal; the rate being 377 instead of 413. A similar remark applies to insanity, 115 persons having died by that form of disease, in place of 132; whilst mortification, hydrocephalus, aneurism, disease of the heart generally, enteritis, peritonitis, and one or two other maladies, proved likewise not so lethal of late as previously, although the difference observed was inconsiderable. Asthma must, however, be added to this list of diminished mortality, 661 deaths having been recorded, in place of 833 during the preceding twelve months.

With reference to another class, or violent deaths, some curious and interesting facts may be quoted, which are also satisfactory in regard to numbers. Thus, fewer persons lost their lives from burns and scalds, than in 1853; the respective amount by such accidents being 274 cases, instead of 309 in the previous year. By hanging and suffocation, 234 against 279. By drowning, 344 in place of 355; and lastly, 655 unfortunate human beings had their mortal existence brought to a premature close, in 1854, by fractures, against 738 similarly killed during the twelve months preceding. In connection with the subject now under investigation, viz., deaths caused by violence, it is a true, however much to be deplored fact, that, last year, 1789 inhabitants of London lost their lives by accident, or in a violent manner; therefore making a greater number than have often died in battles reported great or glorious; and which frequently occasioned much public sympathy, nay, even unbounded gratulation for the truly brave soldiers who then bit the dust, whilst fiercely engaged in mortal combat with their fellow-creatures. Take the most recent example—the Crimea; where, since the English army first landed, up to the 15th of last month, or after about six months severe fighting with their opponents, the total persons killed during that period, as stated in official returns, amounted to 1360 men and officers included; which gives 429 fewer fatal casualties, than all the violent deaths registered in London the past year. But such is hero-worship! and although many of the 1789 human beings, recorded to have perished in the metropolis, through violent means, were perhaps, fathers of families, or industrious workmen supporting themselves and dependents by their honest labor; numbers being likely also well behaved Christian men; nevertheless, these numerous deaths by violence excited, in all probability, very little public notice, or had no sooner occurred, than the individuals were wholly forgotten, unless by immediate relatives, to whom the loss was irreparable.

Notwithstanding the large number of deaths, and varied diseases which produce every year in London extensive mortality, it is remarkable that by many

maladies the fatal cases annually recorded are very often uniform in amount. This coincidence becomes the more interesting, taking into account the immense metropolitan population, and varied occupations, with numerous other circumstances characterizing its inhabitants. Amongst the chief affections exhibiting this peculiar feature, occurs scurvy; whereby 54 persons died in 1854, instead of 55 the year before. Ague, 24, in both years; typhus, 2669, against 2649; mortification, 189, to 186; scrofula, 446, to 443; apoplexy, 1323, to 1339; pneumonia, 3976, to 3938; quinsy, 56, in each year; gastritis, 76, to 79; ulceration of intestines, 144, to 140; hernia, 148, to 149; ileus, 162, to 161; intussusception, 47, to 46; hepatitis, 213, to 215; ischuria, 10, in both periods; cystitis, 37, to 36; and stricture of urethra, 63, to 65. Lastly, omitting several other illustrations which might be included in the same category, intemperance deserves special notice, seeing 83 persons fell victims to this detestable habit, against 88 the previous year; thereby proving that, even from vicious propensities causing death, and after living in a state of degradation, among such inveterate criminal votaries, there reigned a singular uniformity.

Irrespective of minor peculiarities, the great distinguishing feature of 1854, in reference to the sanatory condition of London, was certainly the invasion of cholera last autumn. By this disease, 10,708 persons died during the year; of whom 3906 occurred in August, and 5637 in the following month; whilst very few deaths, it deserves notice, were so recorded either previously or afterwards. The period, however, when this epidemic prevailed most fatally, was in the early part of September; during seven days of which, ending the 9th, 2050 were recorded from cholera alone.

Next week, the cholera deaths decreased to 1549; but during the first seven days of October, the numbers were only 411; and by November the epidemic had nearly ceased.

Viewed in the aggregate, cholera caused more deaths south of the Thames, than in districts north of that river; 5660 persons having died in the former division of the metropolis, during the 15 weeks ending Oct. 21, that being the period when this malady raged with its greatest intensity—whilst 4880 deaths by a similar cause were recorded in the northern portion. If calculated according to population, the ratio amounted to one in every 109 inhabitants of the southern districts, against one in 358 residents north of the Thames; hence, making the proportion in the former, treble that in the latter division of London. Throughout particular districts of both these metropolitan divisions, the mortality, however, varied considerably. In St. Olave's parish, Southwark, the ratio was 1 death by cholera in every 49 inhabitants. In St. James's, Bermondsey, one in 52; whilst from Dulwich, having 1632 inhabitants, not one fatal case of cholera was recorded. Again, in the Berwick Street sub-district of St. James's parish, Westminster, the deaths by cholera, amounted to 1 in 54 inhabitants; but in the sub-district of Golden Square of the same parish, the ratio reached to nearly one cholera death in every 52 residents. Contradistinguished to which result, it deserves mention, as being both highly instructive and curious that, in the Hanover Square sub-district of St. George's parish, immediately adjoining the above named portions of St. James's, then so severely decimated by cholera, the proportion of deaths by that epidemic was only one to every 1123 inhabitants; even although the elevation above Trinity high-water mark, to which recently so much importance has been attached, was under that of the former localities.

Similar remarks apply very forcibly to the St. James's Square sub-district of that parish, the mortality being not more than one in every 637 residents, notwithstanding its high-water level is much below the other two divisions of the same parish, and many persons there dwell in ill-ventilated courts, or insalubrious alleys. That a low elevation of soil, or the general character of its population, cannot constantly be held as powerfully operating influences, further appears by the facts that, in Saffron Hill district, which is known to be a low-lying filthy neighborhood, and generally inhabited by the lower classes, the mortality was reported to be only one death by cholera, in every 1979 inhabitants, whilst in All Souls, Marylebone, the ratio reached one in every 191 residents, although the high-water elevation of this district ranged almost double that of the former locality: whereas in the adjacent Cavendish Square division,

but of rather lower level, the rate was only one fatal case by cholera in every 1632 persons then resident.

Many other interesting points, illustrating the late epidemic in London, might be discussed, but it seems superfluous, since most have already been brought before the profession by various authors. One peculiar feature will, therefore, be only briefly adverted to at present; namely, the great similarity noticed in the atmospheric phenomena prevalent during the first week of September, 1849, and of last year; in both of which periods, the disease raged with its greatest intensity. In each of these weeks, speaking generally, the atmosphere was still, very little wind prevailing, the air was always dry, and the weather often felt languid. Great fluctuations of temperature existed betwixt night and day-time, the variation being frequently from 30 to 35 degrees. The sun had great power, although clouds and fog intervened. No rain fell, and the electricity was positive, having moderate tension. In short, with very slight variations, the weather seemed almost identical during both seasons now quoted; and it may be further stated as curious, that, in 1832, when cholera also prevailed throughout London, somewhat analogous atmospheric features were observed, particularly in regard to the great coldness experienced at night, compared with the day temperature. During the most fatal week of 1854, the highest temperature was 81·2, the lowest being 43·1, hence, showing the entire range to have varied 38·1; which actually occurred on Monday, the 4th of September, when deaths by cholera were exceedingly numerous.

However severe the epidemic may have proved throughout England during last autumn, it raged even more fatally in many continental towns and districts. For instance, amongst the inhabitants of Paris, cholera caused treble the number of deaths in proportion to its population, compared with London; whilst in Messina, the rate of mortality ranged much higher than in any other locality throughout Europe. This large Sicilian city lost upwards of 9000 persons by the epidemic, out of about 40,000 individuals then remaining: the total inhabitants being usually about 80,000; but of these, more than one-half had fled through fright, immediately this disease appeared. Like the outbreak in London, the malady proved most fatal in Messina at the end of August, and beginning of September; from 13 to 1400 persons having died respectively on the 27th, 28th, and 29th of the last-named month. Soon afterwards, the scourge became much milder, especially subsequent to a heavy shower of rain, which fell about the middle of September. The mortality then rapidly receded to 15 or 16 per diem, and speedily disappeared. As in the British metropolis, when cholera prevailed in its greatest virulence at Messina, the weather continued also very hot. The sun seemed a furnace, the air was still, and exceedingly dry, whilst other atmospheric phenomena remained very similar; but immediately these changed, the epidemic abated in this devoted city, which, nevertheless, long continued to be overwhelmed by grief and desolation.

Before concluding the present cursory observations respecting the sanitary condition of England during last year, one subject of great vital interest to the public, as also worthy of notice by members of the medical profession, deserves even more than some passing remarks, namely, the recent prevalence of small-pox amongst the English community, and the important relative question of vaccination. That variola prevailed to an unusual extent, not only in London, but throughout the country generally, fully appears by previous statements; and, further, it is evident that great unwillingness still exists, particularly throughout the agricultural population, to have their children protected by cow-pox. These lamentable truths seem too well authenticated to require additional confirmation. Nevertheless, a few brief extracts from official reports may be quoted, illustrative of the prevailing prejudices. For example, these documents say, "Many parents refuse to have their infants vaccinated. Out of 229 notifications served in one country district, only 51 certificates of successful vaccination were returned. Vaccination is often much neglected by the laboring classes. Several are prejudiced against it, others negligent. Cow-pox is very unpopular, owing to the mistaken notion that other diseases are thereby produced. Some parents become very violent when served with notices requiring them to have their children vaccinated. Others express great dislike to the operation, and will not

allow it to be performed. Fathers do not have the birth of their infants registered, in order to prevent them receiving notices respecting vaccination; and some will even remove into other districts, to avoid detection more effectually. In various places, not one child in four is vaccinated successfully. Thus, in a sub-district of Ipswich, out of 485 notices served, only 111 reports of properly performed cow-pox were returned; whilst, from some parts of Staffordshire, not even one successful case of vaccination is reported, in six births registered." Throughout Lincolnshire, Lancashire, Essex, Suffolk, and numerous other provincial divisions of England, it may be confidently asserted that the same unsatisfactory condition of matters prevails, with reference to the propagation of cow-pox, amongst persons belonging to the ignorant and laboring classes of the population, which seems both astonishing and most lamentable, notwithstanding the prophylactic virtues of this invaluable blessing are undoubted, and prove so highly beneficial to the entire community.

Although it must be admitted, much inveterate ignorance and strong prejudices unfortunately often pervade the cross minds of uneducated individuals, which are greatly adverse to the extension of cow-pox, another important fact should not be concealed, that frequently when vaccination is said to have been employed, the operation was sometimes so carelessly performed, or the lymph proved so inefficient, that it became utterly futile. Hence, the subject thus erroneously believed as protected against variola, really remained in even a much worse state than previously; because persons thus treated, always afterwards impressed with a false security, thought it superfluous to adopt any precautions, should they be ever exposed to infection. In various parts of Wales, as also in some agricultural portions of England, vaccination seems to have been carelessly effected, the person being only, as it is said popularly, "cut for cow-pox," without a competent judge subsequently ascertaining and reporting whether the genuine disease was really propagated. Amongst the different localities to which these remarks apply, while Essex ranks bad, Suffolk may be particularly mentioned, since, on unquestionable authority, it can be truly asserted that vaccination appears very badly indeed performed in the latter county, whereby subsequent dangerous and fatal attacks of small-pox often ensue; and, in this respect, compared with many other provincial districts, Suffolk stands out in marked discreditable contrast. In support of this opinion, entertained also by other observers, the admirable registers so carefully kept at the Small-pox Hospital, near Highgate, of all patients there admitted, may be confidently appealed to as conclusive evidence. This important subject is therefore now specially noticed, in order to attract the attention of medical practitioners, and parochial authorities, particularly to the county last named, who will, it is earnestly hoped, take efficient measures, and that speedily, to remedy such remarkable defects in future.

Several benevolent efforts have recently been made by Government and individuals, to disseminate genuine cowpox throughout the country, whilst Acts of Parliament have, at various times, been passed to promote an object so exceedingly desirable. The latest measure adopted for this purpose, from the official reports of some local registrars, appears, however, in different places, to have proved hitherto inefficient; and in others, the Act, they state, cannot be worked. Again, the public will not be always compelled by Act of Parliament, even gratuitously, to accept the great benefits conferred by vaccination. According to mature convictions long entertained by the writer of this report, instead of making vaccination compulsory, or only in the manner heretofore attempted to be carried forward, if a law were passed which rendered it hereafter imperative, if not retrospective, for every person employed in the public service, or who received pay from Government in any form, or from chartered corporations, or performed any legal act, or who should be appointed to an office entailing upon occupants responsible duties towards the community, then in every case, prior to filling such appointments, the party should always have been *properly vaccinated*. If this was made the invariable practice, a very great step in advance would at once be accomplished.

Take, for example, the Inland Revenue Department, the navy, or the army, or even the metropolitan police, in which numerous body many constables have never been properly vaccinated. Before being admitted into this force, as also

prior to any one accepting public employment which entitles holders to receive emolument from the state, uncontrovertible proof, with characteristic bodily marks, should be produced of having previously undergone genuine vaccination. In Prussia, this system is enforced with the greatest benefits, where parties cannot even marry, or perform numerous other important acts, without having first been correctly vaccinated, and this plan works admirably. Were a somewhat similar system pursued in Great Britain, or should the idea promulgated in a previous paragraph be legally sanctioned, instead of compelling Englishmen to vaccinate their children under the fear of penalties, if John Bull was induced to do so, by the hope of future benefits to his offspring, much more important results to the public would assuredly ensue. The views now expressed (although many cogent arguments might be easily stated in their support), need not be further discussed on the present occasion. Nevertheless, the question here mooted, deserves investigation; and as some amendment in the existing laws for promoting vaccination seems very much required, the proposal above shadowed forth, even imperfectly, should be brought before the legislature for deliberate consideration; and, if approved, rendered by statute everywhere imperative.

The application of Electro-chemistry to the treatment of Saturnine and other forms of Chronic Metallic Poisoning. By MM. POEY and MAURICE VERGNES. ("Medical Times and Gazette," 3d March, 1855.)

In 1832, Dr. Coster, and in 1833 M. Fabré-Palaprat, following a suggestion of Becquerel, employed voltaic electricity to facilitate the introduction of certain medicines into the body, but their experiments excited little attention. M. Fabré-Palaprat appears also to have discovered—though Dr. Pareira failed to verify his statement—that a substance might be carried through the body by this means. He bound on one arm a compress, moistened with a solution of iodide of potassium, and covered by a platinum disk, connected with the negative pole of a voltaic battery of thirty pairs of plates. On the other arm was placed a compress, moistened with solution of starch, and covered by a platinum disk, connected with the positive pole of the battery. In a few minutes the starch acquired a blue tinge, showing that the iodine had been transported from one pole to the other. MM. Poey and Maurice Vergnès apply the same means to the extraction of various metallic substances out of the body, and if experience corroborates their statements, it is not easy to over-estimate their importance. At any rate, the statements appeared of so much importance to M. Dumas, as to lead him to lay them before the French Academy of Sciences.

In these experiments the patient is placed in a large metallic bathing tub, which is properly isolated from the ground. In this tub he sits upon a bench, with his legs stretched out, and water is poured in until it comes up to his neck. The water is slightly acidulated, to increase its conductivity; and the acid varied according to the cases. Nitric or hydrochloric acid is used for the extraction of mercury, silver, or gold; sulphuric acid for that of lead. This done, the negative pole of a pile is brought into contact with the sides of the bathing-tub, and the positive pole placed in the hands of the patient.

On completing the circuit, the electrical current precipitates itself through the body of the sufferer, penetrates into the depth of his bones, pursues in all the tissues every particle of metal, seizes it, restores its primitive form, and, chasing it out of the organism, deposits it on the sides of the tub, where it becomes apparent to the naked eye.

In this discovery, accident has played a part. One of the inventors—M. Maurice Vergnès—occupied himself with galvanic gilding and silvering. His hands being in continual contact with solutions of nitrate and cyanuret of gold and silver, became covered with ulcers in consequence of the introduction of metallic particles. One day he plunged the diseased organs into the electro-chemical bath, at the positive pole of the pile; and, after a quarter of an hour, to his great surprise, a small plate of metal brought into contact with the negative pole became covered with a thin coating of gold and silver, the coating being derived from his own hands. This occurred in April, 1852.

In subsequent experiments, a large battery was used, consisting of 30 pairs of plates. Each pair has a diameter of 40 millimetres, and is 217 millimetres high. The number of the pairs to be used at the beginning of the operation depends upon the temperament of the patient and the nature of the malady. Thus a delicate and very nervous person is at first submitted to the action of ten or twelve pairs only, and every five minutes the number is increased. A person of a sanguine or lymphatic temperament is able to endure a greater number of elements. The same observation applies to the quantity of acid employed in the bath, less being required for a nervous than a lymphatic constitution.

The metallic atoms extracted from the body deposit themselves on the whole surface of the tub; but they are more abundant opposite to the part of the body where the metal was lodged. The size of the metallic spots varies considerably; some are microscopical; others have the dimensions of a pea; those of the size of a pin's head are very common. "I have seen," says M. Poey, "after the first bath of a person who complained of pains in the arms, from having taken mercury, the contours of the arm perfectly drawn upon the metallic plate by the deposits of metallic atoms that without doubt proceeded from the suffering member."

We shall terminate our article with an experiment made before the members of the Faculty of Medicine of the Havana.

A patient had undergone during a whole week, an external mercurial treatment (frictions with mercurial ointment). He had then taken several lukewarm baths, and it could not be supposed that any mercury still remained attached to the skin.

He was put into a water-bath mixed with muriatic acid. After having remained in it for five minutes, some of the water was taken out, and afterwards analysed by M. Baracca, who found no traces of mercury in it.

The circuit was then closed; and, after the electric current had acted for about an hour, a new sample of the water was taken. Mixed with an alkaline sulphuret, the water became black; and a piece of copper having been dipped into it, gave sure signs of the existence of a small quantity of mercury. Thus the water of the bath now held mercury in solution.

During the experiment, a perfectly clean piece of copper had been placed at the negative pole. When it was taken out of the water, towards the end of the operation, its yellow-greenish color not only testified an action in which mercury had taken a part, but small white spots were scattered over the surface, one of which, of the size of a square line, was very brilliant, and of a mercurial whiteness. The plate having been heated underneath, the spot disappeared, and the original color of the copper was restored—a fact which proves that the spot was mercurial.

II.

REPORT ON THE PROGRESS OF SURGERY.

Lettsomian Lectures on the Physical Constitution, Diseases, and Fractures of the Bones.

By JOHN BISHOP, F.R.S. (London, Highley, 12mo. 1855.)

THREE lectures, founded by the late Dr. Lettsom, are annually delivered before the London Medical Society. In the session 1854-55, Mr. Bishop being appointed to deliver these lectures, chose for his subject a most important series of surgical diseases, and one to which he had devoted great attention. The diseases of bones are so common, as to be daily under the notice of the surgeon, and, in fact, constitute a very considerable part of surgical practice.

The first lecture is devoted to the consideration of the physical properties of bone, the influence of the relative proportions of the organic and inorganic constituents on its strength, elasticity, and flexibility; to the softening of bones in rickets and mollities ossium; to caries and psoas abscess. In this lecture the author proves, by a well-devised series of experiments, that the physical properties of bone do really depend on the relative proportions of earthy and organic matter,—in opposition to the theory of Stark, adopted by Stanley, Paget, and other writers, who, finding that the mean proportion of inorganic to organic substances was as 66·39, 33·91, or nearly as 2·1, while the hardness, strength, flexibility, toughness, and other physical properties varied considerably in different bones,—draws the conclusion that these physical properties depend not on the relative proportions of these constituents, but on differences in the organic structure of bone. The primary proposition of Stark, however, is itself incorrect, since it is proved by the analysis of Von Bibra that the relative proportions of the inorganic and organic constituents do vary in different bones of the same person to a sufficient extent to influence their hardness, strength, and elasticity. Thus, while the femur, tibia, fibula, ulna, radius, metacarpus, and occipital bones of a woman twenty-five years of age contained between 68 and 69 per cent. of earthy matter; the humerus contained between 69 and 70; the clavicle 67·57; the scapula, 65·38; a rib, 63·57; the innominatum, 59·97; a vertebra, 54·25; and the sternum 51·43. It will be seen from these data that the largest proportion of earthy matter is contained in those bones that are exposed to the greatest strain and pressure, and are, consequently, more dense in their structure; while the spongy bones subjected to less pressure contain from 5 to 10 per cent. less of inorganic matter.

Mr. Bishop has put this question to the test of direct and positive experiment. In order to determine whether the elasticity and strength of bone do or do not vary with the proportions of the organic and inorganic constituents, and, if such be the case, what is really the smallest quantity of inorganic matter consistent with the efficient strength and elasticity of bone to protect and support the body, it is only necessary to remove by degrees from a lamina of healthy bone, of a given weight, certain quantities of its inorganic constituents, by means of dilute hydrochloric acid, and then to fix one end of the lamina firmly, and suspend at the other end a weight, sufficient to bend the bone into a curve. If the elasticity of the bone be unimpaired, the lamina will, so soon as the weight is removed, return to its primitive form. Mr. Bishop took a rectangular plate of bone from the shaft of the femur of the ox, which weighed seventy-six grains, fixed one end in a vice, and by means of a string attached to the other end suspended a weight of little more than two pounds, the amount of flexure produced was about equal

to an angle of 5 degrees, and on the removal of the weight it recovered at once its primitive form. The same lamina was plunged in weak hydrochloric acid for about two hours, taken out, and allowed to dry, after which the loss of weight was found to be fifteen grains, consisting chiefly of inorganic matter. Again fixed in the vice, and the same weight suspended from its fore extremity, the curve was increased to eight degrees, and after the removal of the weight, it regained its primitive form, demonstrating that it still retained its elasticity. It was again placed in the acid for some time, and again dried, after which it was found to have lost five grains more of the inorganic constituents, being reduced to 51 grains. On being again fixed as before, and the same weight applied, the angle of curvature increased to 35 degrees, and after removal of the weight, the bone remained curved, showing not only a reduction of strength, but also a very considerable diminution of elasticity. This corresponds with the altered proportions of the inorganic and organic constituents of bone, which are in the normal state as 2:1, while in the bone after the second immersion in hydrochloric acid they were as 3:2. As it might be objected that the loss of solid matter had been the cause of the loss of strength, and the consequent increase of the curve under pressure, another lamina from the same bone and of similar dimensions was ground down to the same weight as that which had been acted on by hydrochloric acid, and, on being subjected to the same pressure, the curve was 25 degrees, instead of 35 degrees, leaving ten degrees evidently due to the removal of the inorganic matter. There can be no doubt that the specific gravity of bones differs in degree, corresponding to differences in the amount of their components, and the elasticity varies with the specific gravity, but the researches of the lecturer were not so complete as to justify him in laying the results before the Society. Another proof that the elasticity and strength of bone depend on the proportion of its constituents, and not on structure, is, that two laminæ, one of ivory, the other of bone, of equal dimensions, take nearly the same curve on the application of the same weight; the structure of the two being widely different, while the chemical constitution is nearly identical.

The practical application of these researches is important as elucidating the cause and nature of those curvatures of bones seen so commonly in early life, and too frequently producing permanent deformity. In early age—from one to four years, during the process of teething, the phosphate of lime is partially consumed in the production of the teeth, and at this period the tibia and fibula often become so flexible from deficiency of earthy matter, without any positive disease, as to bend under the weight of the body, and it is in this state that mechanical support is necessary, for if while in this curved condition the bones acquire a sufficient proportion of earthy matter to restore their natural elasticity, they remain distorted throughout life, and the curvature is irremediable. In the same way, the vertebræ frequently become soft and compressible about the age of puberty, especially in females, and remain in this condition to the twentieth year; and if during this period, they are unequally pressed upon by the long-continued repetition of some particular attitude of the body, they give way, and being inelastic, do not recover their form. If the peculiar attitude be persisted in until the bones regain their normal proportion of inorganic matter, the spinal deformity will resist all treatment, and be permanent. Simple correction of the attitude, so as to insure equal pressure during the period of softening, will easily correct the deformity.

In the cases considered above, no structural disease of the bones can be discovered, but deficiency of the inorganic matter producing unnatural flexibility of the bones accompanies organic changes in rickets and mollities ossium. In the former, the bone-cells are found nearly empty, and the canaliculi disappear; the lamellæ become partially obliterated, and vacant spaces occupied only by a few loose bone-corpuscles exist between the remaining laminæ; the bones are highly vascular, and the vessels gorged with dark blood; the periosteum abnormally vascular, turbid, and so firmly adherent to the bone that when forcibly detached it brings away with it a layer of the expanded spongy tissue of the bone.

The other form of softening of bone, osteo-malacia or mollities ossium, is peculiar to adult, if not advanced age. It chiefly attacks the bones of the trunk, leaving the extremities free. The changes commence in the laminæ, which in-

crease in size, and the bone around them becomes more transparent, and, finally, several laminæ unite, and form one cavity, which, according to Professor Quekett, is soon filled with adipose tissue, so that the bones are found attenuated and full of fat; and from the large quantity of adipose matter occupying the position of the normal tissues, this disease has been viewed as a fatty degeneration of bone. So great is the diminution of the earthy matter, that it was found by Von Bibra to be reduced to 20·25 per cent. in the vertebra of a man afflicted with this disease. In addition to the adipose deposit, a large number of peculiar nucleated cells, probably of a malignant character, were deposited in the bones.

The lecture concludes with caries or ulceration of bone, and a very full description of the pathology of this form of disease is given by the author.

The second lecture is devoted to the consideration of the organic changes in necrosis, the mode of formation of the new, and the throwing off of the dead bone; the necessity of removal of the dead bone by surgical manipulation; followed by remarks on exostoses, osteophytes, and soft tumors of bone, and the difficulty of their diagnosis.

In relation to compact exostoses, the author remarks that a tumor of this kind presents to the eye the appearance, and to the touch the form, of a nodule, with an abrupt margin; it is frequently separated from the subjacent bone by a furrow of variable thickness; and sometimes there is a deep fissure between the nodule and the bone lying beneath. The density of these nodules is often very great, and in this state the disease is termed the ivory exostosis. These ivory tumors are of greater density and specific gravity than the normal bone with which they are associated, unless they happen to be connected with bone already in a state of induration. They are always composed of laminæ, and seem never to be intermixed with spongy tissue. The density of the tumor is owing to the greater number of laminæ contained in a given space, when compared with the number of laminæ found in the same space in normal bone. The Harveian canals are small, and few in number, but a well-defined lamellar system is found surrounding them. The bone-corpuscles are irregularly scattered in the substance of the tumor, and in some places they are clustered together, while in other parts larger tracts are found entirely destitute of them. The color of these exostoses is yellowish-white, and they are of a lighter hue than the bone to which they are attached.

The third lecture comprises the fractures and reparation of bone; the unequal effects of falls in the production of fracture; the formation and structure of the primary and secondary callus; fractures of difficult reunion; of the neck of the femur, of the patella, of the olecranon, and coronoid processes, with a refutation of the opinion of Sir Astley Cooper, that these fractures are never united by bone.

The two points of especial interest in this lecture are the remarks of the author on Sir Astley Cooper's opinions concerning fracture of the neck of the thigh bone within the capsule, and the author's views on the position in which the limb should be placed after fracture of the shaft of the thigh bone.

It is well known that the late Sir Astley Cooper always taught the doctrine that fractures of the neck of the thigh bone were incapable of being repaired by osseous matter, and that in the whole course of his practice he had never met with a single instance, nor could he meet with any one who had seen a case where such an occurrence had happened; and that union within the capsular ligaments (when any such union takes place) is always by membrane. However, it appears that he had no sooner published the last edition of his work, "On Fractures and Dislocations," than Mr. Swan forwarded to him a specimen of the thigh bone in which the fracture of the neck had become reunited by osseous matter. Sir Astley retained the specimen until his death, and it appears that he never had the courage or policy to promulgate the discovery of the error of that doctrine which had so pervaded his mind, and which had misled the profession during a period of forty years. The specimen of Mr. Swan is now in the Museum of the Royal College of Surgeons. Besides which, there are cases of Mr. Hodgson, published in the seventh volume of the Guy's Hospital Reports, the preparations of which are also in the Museum of the College of Surgeons. These specimens render the question of the possibility of the reunion of the neck of the femur within the capsular ligament completely verified.

Mr. Bishop prefers the double or triple inclined plane in the treatment of fractures of the shaft of the thigh bone to the straight splint of Desault. He says, "The use of the straight splint is advocated by Desault, and, I believe, is used at most of the London Hospitals. This principle of the latter plan (the double or triple inclined plane), which was first recommended by Pott, and used by Sir A. Cooper, Dupuytren, Mr. Hodgson, &c., is now adopted by many of the best surgeons in this country. The objection made to the long straight splint of Desault is that the skin of the pelvis and leg are so pressed on by the apparatus as to occasion great and almost unsupportable suffering, which may be succeeded by inflammation, suppuration, and gangrene; so that when the splints are removed, at the end of three weeks, sloughs are sometimes found on the leg and foot, so as to require amputation, under which the patient may sink. Another disadvantage of the straight splint is that the ends of the fractured bone, not having a vertical support, may overlap each other, and the limb may become shortened." Thus, if the bone be not steadily supported by other means than the straight splint, the lower fractured end will fall below the natural direction of the bone, while the upper part is drawn up at the same time by the action of the psoas and iliacus, and the two fractured extremities will, by the action of the other muscles, be caused to ride over each other, and the limb will necessarily be shortened. But the case is very different when the flexed position is adopted, both in reducing the fracture, and in retaining the limb in position. The course to be pursued is to place the patient on his back; the pelvis is then flexed, or held by assistants; the thigh is raised gently, and drawn forwards, and the leg flexed at the knee-joint. In this way the limb is easily drawn to its normal length without violence, and the foot regains its natural direction by the relaxation of the adductors, which cause the eversion of the foot, and of the glutei, which draw the shaft of the bone upwards. The limb thus treated, will retain the parts in position without any tight bandaging, and without causing the same amount of irritation that the other system produces.

A Guide to the practical study of Diseases of the Eye, with an outline of their medical and operative treatment. By JAMES DIXON, Surgeon to the Royal London Ophthalmic Hospital, &c. (London, John Churchill, New Burlington Street, 12mo, 1855.)

During the past year, when advertisements announced the advent of this work, we were wont to speculate on the nature of the addition that was about to be made to our already crowded literature on eye diseases; and taking into consideration the great opportunities for observation that the author possessed, the long period that he has commanded them, his well-known literary taste, and his high education, we argued ourselves into the idea that, before long, we should open a full and comprehensive work on the eye, in which the student who desired information in this branch of our profession might find enough for his guidance and instruction, while the busy practitioner, already somewhat acquainted with ophthalmic practice, and unable, from his avocations, to consult monographs, much less scattered papers, might at once find any desired information, and ascertain the last improvements in practice with as much ease as if he were talking to the writer. These expectations, however, are by no means realized, nor can they be in a small octavo volume of widely printed pages in large type; but be this as it may, our duty is to review that which we receive, to point out the excellencies, and to notice the deficiencies. Mr. Dixon, then, does not profess more than he has done, for we are warned in the preface not to expect a systematic work. "I have, therefore, chiefly dwelt on the description of outward phenomena; for, inasmuch as the peculiar susceptibility of a patient must cause endless modifications of his subjective symptoms, a full consideration of these would have expanded my volume, from its present moderate dimensions, up to a system of ophthalmic pathology." We have then, in fact, before us, an elementary treatise, and parts of it very elementary, intended for the early student, and not a work of reference. "We already possess," he continues, "valuable systematic works, which the advanced student may always refer to with advantage, as soon as he has familiarized

himself with the outward appearances of ophthalmic diseases." We cannot help remarking that among the books of reference mentioned in the preface, no notice is taken of a modern work that has tended to raise the standard of ophthalmology in this country, and has undergone several reprints in foreign countries.

Before commencing with the subject-matter, we much deplore a very grave defect in the volume, namely, the want of an index. We cannot understand how a scholar, who well knows the value of a good index, can publish a work on science without one. There is a table of contents, but it is not classified. The worth of a literary production of this nature is materially lessened by such a want.

There are nineteen chapters. In the first, which is devoted to the examination of the eye, the chief points of interest are the remarks on the ophthalmoscope. After a few short and useful rules about applying the instrument, strict caution is enjoined against its abuse.

"So much has lately been written about the value of the ophthalmoscope as a means of detecting incipient disease of the retina, that the student must be warned against the irreparable mischief he may inflict upon an eye, in which vision is only slightly impaired, by subjecting it to an intense glare of concentrated light.

"His first trials should be made on one of the lower animals,—a kitten, for example; and when he has acquired readiness in using the instrument, he may next proceed to examine patients who have long been hopelessly blind, but in whom the media of the eye remain transparent."

"One very important fact should never be lost sight of by those who employ the ophthalmoscope, namely, that the mere concentration of powerful light on the retina, if continued for more than a few seconds, does of itself place the part in an unnatural condition. In exploring the internal ear, by means of artificial light, we may, indeed, concentrate the rays upon the tympanic cavity or its membrane, to any amount, without injury to the parts illuminated; but the retina, so far from being a merely passive object of examination, is just the one tissue in the body which appreciates the intensity of the rays which fall upon it; and it must be borne in mind that an eye may be irritable and intolerant of light to an extreme degree, even although there may be a considerable diminution in its power of perceiving objects." (Page 8.)

We should have been better pleased if more positive personal information had been added. When a man in Mr. Dixon's position notices an appliance of supposed high value, we naturally expect a definite exposition of his views. The majority of those who have written on the instrument are but students in ophthalmic medicine, or, at least, have not had Mr. Dixon's opportunities for using it.

Chapter the Second.—"*The Conjunctiva*."—After two paragraphs on the appearance of the conjunctiva in health, we meet with "*Diseases of the Conjunctiva*," arranged as follows:

Pterygium.—Here, in speaking confidently from what he (the author) alone has seen, and deducing a rule, a reader may be misled.

"The apex is obtusely rounded off, opaque and whitish in texture, and so firmly attached to the cornea as to look almost like an elevated, thickened cicatrix of that structure. It is this encroachment on the cornea that usually first alarms the patient; and he applies to the surgeon under the apprehension 'of a skin growing over the sight.' There is, however, no real danger of this taking place, for, according to my own experience, the apex never extends so far over the cornea, as to obstruct the area of the pupil." (Page 12.)

We have had to treat two cases in which the pupil was obstructed. In the one, two-thirds of the cornea was traversed, and the eye was quite useless when directed to objects directly in front. It was under the assurance of the impossibility of the pterygium being ever more than a deformity, that assistance was injudiciously delayed.

"*Inflammation (Ophthalmia)*."—This subject has been subdivided and mystified

by writers, to the distress and mortification of students, who have been sadly puzzled even with the descriptions, to say nothing of their not being able to recognize what was talked about. As usual, our author has a classification of his own; it is as follows: "*Simple Ophthalmia*," "*Pustular Ophthalmia*," "*Catarrhal Ophthalmia*," "*Purulent Ophthalmia*," "*Granular Ophthalmia*," "*Gonorrheal Ophthalmia*," "*Purulent Ophthalmia of Infants*," "*Scrofulous Ophthalmia*," "*Ezanthematous Ophthalmia*," "*Chronic Ophthalmia*." The symptoms and treatment of these forms are concisely, simply, and well given. There is, too, displayed, the common sense and sound judgment that characterizes good surgery. There is an absence of the violent measures miscalled remedies. The lancet and escharotics do not flourish, but soothing means and general treatment take their place. This sentence, under the head of "*simple ophthalmia*," should be written in letters of gold.

"In using stimulating lotions, it should be remembered that their use is not to be persevered in too long, otherwise they keep up, instead of subduing, the irritability of the conjunctiva; and it is well, after they have been used for a few days, to leave them off for a day or two, and observe the result." (Page 19.)

We believe that any one who has taken the trouble to watch, or had it in his power to see, for any length of time, a case of genuine granular ophthalmia treated with escharotics, will confess the inefficacy of such treatment. We are sure that they do harm, and therefore we have satisfaction in reading this.

"I believe that in most cases of granular lid our chief dependence must be placed in improving the patient's general health, by giving him iron and quinine, singly or in combination, regulating his diet, and, if possible, placing him in a pure and bracing air."

We must, however, deprecate what follows, as we regard it as a piece of useless barbarism.

"An issue in the skin of the temple, kept open with a single pea, and occasionally stimulated, if the discharge becomes scanty, with some caustic or other irritant, is a slow, but often very serviceable adjunct." (Page 36.)

Scrofulous ophthalmia—

"Locally, we should abstain from over-stimulation and teasing the eyes, and employ such applications only as are grateful and soothing. Counter-irritation, short of weakening the patient, affords the greatest relief. Abstraction of blood I can hardly conceive admissible in any case. As for the barbarous proceeding termed 'scarification of the conjunctiva,' it is so nearly obsolete that one may hope to see it, ere long, discarded from ophthalmic practice." (Page 51.)

Again—

"But all remedial measures will be in vain unless proper care is paid to the child's diet and mode of life. Plenty of plain, nourishing food should be given; but there should be no over-feeding. Some of the most troublesome cases I have ever seen have been those where a young child, of three or four years, has been stuffed with meat twice a day, with beer at dinner, and even a little wine besides, while, at the same time, the bowels were constantly worried with some mercurial preparation, and a solution of nitrate of silver was dropped, night and morning, upon the irritable eyeball." (Page 53.)

Chapter the Third is devoted to a very brief consideration of "Abnormal states of sub-conjunctival tissue."

Chapter the Fourth.—"*The Cornea*." "*Conical Cornea*."—We are not surprised at not finding any addition to our imperfect means for treating this malady. There is, however, a point respecting the pathology that we may quote, as there is abroad a theory about the disease always being of an inflammatory origin, and which is incorrect.

"In saying that conical cornea usually begins when the patient is between twenty and thirty years of age, I restrict the remark to the genuine, uninflamatory affection; for a similar deformity is sometimes the result of inflammation of the part, with or without ulceration. I quote a case of the latter kind, as it presents a rare instance of conical cornea occurring at an early age.

"Priscilla S., aged four years, was brought to me on the 9th April, 1847, with an opacity at the centre of the left cornea, the result of a small ulcer which had cicatrized. The cornea was very slightly conical, and, except at the centre, quite transparent. On February 8th, 1849, she was brought again, the sight

of the eye having become very defective. I found the small cicatrix in the same state as before, but the cornea had assumed a completely conical form." (Page 67.)

The disgusting "emeto-purgative plan" of making a patient swallow an emetic every day for a year or more, is justly censured.

The treatment of acute inflammation of the cornea is so dissimilar to that usually prescribed, that we subjoin it.

"I am aware that the treatment of acute inflammation of the cornea, recommended by those whose opinions are entitled to the utmost attention, from their large experience and high scientific attainments, comprises active depletion, in the form of general and local bleeding, and the administration of mercury so as to affect the mouth. Nevertheless, I must express my decided conviction that, in the vast majority of such cases, if not in all, both bleeding and 'mercurialization' are most injurious. I speak, be it observed, of that form of inflammation which is characterized by a general haziness of the cornea, the peculiar crescentic plexus of vessels at its margin, tenderness of the globe, intolerance of light, and lachrymation, and which occurs, for the most part, in young persons of a manifestly delicate and irritable frame; or in those who, with an outward appearance of what may almost be termed vigor, are really over-excitable, and as much depressed by local disease as the habitually pale and exsanguine. Such patients are always injured by mercury, but under the steady use of tonics, especially iron, with or without quinine, the inflammatory symptoms subside, the vessels which had begun to shoot into the cornea dwindle and disappear, the haziness is lessened, the irritability of the eye subsides, and it is gradually restored to usefulness. Counter-irritation, by means of repeated small blisters to the temples, or behind the ears, is an important aid to the tonic treatment. In certain subjects, a few leeches occasionally applied to the temples afford great relief; but in the majority of cases they are useless, or even injurious, and aggravate, instead of lessening, that neuralgic character which the pain so often assumes when the fibrous tissues of the eyeball are inflamed." (Page 75.)

We have not ourselves for years adopted any other principle of practice, excepting the blistering, in which we have not the least faith. It is the term "acute," used along with inflammation, which drives surgeons to do such violent things with their patients. So long as men think that disease may arise from an excess of vitality, they will continue to commit manslaughter by bleeding and purging their patients to death. Mal-assimilation and mal-nutrition are not sufficiently associated with morbid changes in our body.

The remainder of this chapter is occupied with "*Inflammation of the Cornea*," "*Suppuration, Ulceration, and Opacities of the Cornea*," "*Foreign Bodies in the Cornea*," and "*Foreign Bodies in the Aqueous Chambers*." We cannot take exception at what is written. In a work of any greater pretensions, we should characterize it as being very scanty.

Chapter the Fifth.—"*On the Sclerotic*."—This may be rapidly passed. As an instance of the brevity with which the subject is treated, we quote the passage which immediately follows an account of sclerotic inflammation.

"Attacks of this kind are much modified by rheumatic complications, and it would lead me too far were I fully to enter upon the treatment to be pursued." (Page 106.)

Chapter the Sixth.—"*The Iris*."—This is the longest in the book. Here we find that our author believes in a "*membrana pupillaris*."

"It is said that in rare instances the 'pupillary membrane' which exists in the fetus, is not wholly absorbed at birth; and its persistence may give rise to a belief that the infant is the subject of congenital cataract. I have never met with a case in which the whole of this membrane was persistent after birth, but I have occasionally seen in adults what appeared to be slight vestiges of it, in the form of little tags of the fibrous tissue of the iris, projecting from that part to which the pupillary membrane had been attached. This membrane, it must be recollected, is not united with the iris at the extreme edge of the pupil, but at some little distance from it." (Page 118.)

Surely he is not unaware that Mr. Quekett has, in vol. iii. of the "*Transactions of the Microscopic Society of London*," disproved that any such mem-

brane exists. "The vessels of the posterior layer of the capsule of the fetal wolf, as shown in Plate III, fig. 1, are of small size; they are derived from the arteria centralis retinae, which, after reaching the capsule, divides generally into two branches, each of which divides and subdivides in a radiating manner, so as to form a delicate plexus; on reaching the equator of the lens, the vessels become more or less straight, and, in some cases, each straight vessel will split up into two branches, one of which will pass into or join the vessels of the anterior layer of the capsule, and the other anastomose with those of the iris. The vessels of the anterior layer, as shown in Plate III, fig. 2, are of much larger size, and less numerous than those seen in fig. 1, which is a representation of the posterior layer of the same lens, and they evidently correspond in arrangement to those described as peculiar to the membrana pupillaris, and as I have never been able to find two sets of vessels in front of the capsule, it would appear that the presence of a membrana pupillaris, as generally described as filling up or closing the aperture of the pupil, is more or less the result of accident; if the lens come away with its capsule entirely covered with vessels, no membrana pupillaris will be found, but if (as frequently happens) the straight vessels above described as passing into the anterior capsule give way, then the layer of the capsule may be retained by the vessels connecting it with the iris, and so form the membrana pupillaris."—"Microscopic Journal." We subjoin some of the valuable passages in this chapter. In alluding to the term *iritis*—

"Now, it would be too great an innovation, I think, to discard a word so universally employed, unless we could substitute one altogether unobjectionable; and it will be sufficient, if the student bear in mind that the anatomical connections of the iris with other parts of the eye are so intimate, that inflammation in the iris always more or less involves the deeper textures of the eyeball." (Page 123.)

"The appearances common to all cases of *iritis* are—a red zone in the sclerotic, close to its junction with the cornea; more or less deformity of the pupil, and loss of its normal mobility; a change of color in the iris; loss of its peculiar fibrous appearance." (Page 127.)

"I may now briefly sum up what has been said concerning the symptoms of rheumatic *iritis*.

"It chiefly attacks the fibrous tissues of the eye, and is always attended with pain, such as accompanies inflammation of similar structures in other parts of the body.

"The phenomena are eminently those of vascular engorgement; the sclerotic exhibits a peculiar purplish-red tint, and bloodvessels become visible in the iris, where they are never seen in a state of health.

"There is little tendency to effusion of fibrine, as compared with the syphilitic inflammation; but, although the fibrine is poured out in small quantity, it is deposited in a situation eminently injurious to vision—namely, between the lens and the posterior surface and pupillary margin of the iris.

"In the cornea there is a marked disposition to inflammatory deposit, and consequent opacity; and this frequently becomes more marked as the inflammation in the sclerotic and iris subsides." (Page 134.)

Regarding "*Syphilitic Iritis*:"—

"The efficacy of turpentine in *iritis* was strongly urged some years ago by Carmichael, of Dublin. He by no means proposed it as a substitute for mercury on ordinary occasions, but only as usual in those cases where, from extreme debility of the patient, mercury might be injurious. In such cases, more benefit is, I think, likely to result from quinine, in combination, perhaps, with small doses of mercury; the patient's strength, meantime, being sustained by a liberal diet.

"The only cases in which I have myself found turpentine beneficial, have been those of a rheumatic character, with visible enlargement of the vessels of the iris, the characteristic sclerotic redness, and tenderness of the globe, but without any marked tendency to the effusion of fibrine into the anterior chamber. I wish I could point out some guiding sign by which it could be determined that a given case of this peculiar form of *iritis* would be benefited by turpentine; but I cannot. I can only say from experience, that now and then I have met

with a case in which mercury seemed to do harm, and quinine no good; but where Chian turpentine, in five-grain pills, three or four times a day, effected a cure. In other cases which seemed of the same kind, I have found the turpentine apparently useless." (Page 143.)

We find about a dozen pages, including the narration of two cases from the author's own practice, devoted to "*syphilitic iritis*" in infants. We fully concur concerning the rarity of the disease. We have never ourselves seen, so far as we remember, a single unequivocal sample. Mr. Dixon shows the value of a treatment consisting of Hydr. c. Cretâ combined respectively with the iodide of potash or with bark.

Respecting "*Gouty Iritis*"—

"I cannot recollect ever to have seen a case of true iritis which I could distinctly trace to a gouty origin; and the appearances I have enumerated, as assigned to '*Arthritic Iritis*,' are found in patients who have never had the slightest symptom of gout in other parts of the body. They are identical with what we see in the early stage of that general inflammation of the globe which has received the name of '*Glaucoma*.'"

"I should have hesitated to speak separately of scrofulous iritis, were it not for one patient who came under my notice several years ago." (Page 157.)

Chapter the Seventh contains three pages and a half on "*Inflammation of the Iris and Cornea together*." The author endeavors to show that the term *aquocapsulitis* is based on an anatomical error, that the affection usually so described is superficial inflammation of the iris and the cornea. This is a subject which is now exciting attention, and the clearest exposition of it that we have seen is in a paper by Mr. Haynes Walton, in the "*Medical Times and Gazette*" for May 5th, 1855, headed "*A Clinical Lecture on the non-existence of such a disease as aquo-capsulitis*."

Chapter the Eighth, on "*The Choroid and Retina*," is excellent. It shows that we do not possess any means of diagnosing a case of incipient "*Choroiditis*." The very name is objected to.

"That any recognizable inflammation of the choroid can exist apart from disease of the retina, appears to me an entirely arbitrary assumption, unsupported by the phenomena observed in actual practice, and tending only to perplex the student, by giving rise to a needless multiplication of terms, and fine-drawn distinctions." (Page 171.)

Tyrrell's pet theory about "*muscæ volitantes*" being due to a congestion of the choroid, is overthrown, and the absurdity of the terms, "*Choroido-Iritis*," "*Sclerotico-Choroiditis*," pointed out.

"The whole fundus of the vitreous chamber may afford evidences of extensive disorganization, while the iris and superficial textures appear perfectly healthy. Such examinations prove how little dependence can be placed on those descriptions of '*Choroiditis*,' and '*Retinitis*,' as set forth by some systematic writers, who would teach us, from the condition of the pupil, the color of the iris, or the appearances noticed by the patient, to pronounce with certainty as to whether the choroid or the retina be the seat of disease." (Page 175.)

The chapters Nine and Ten, respectively on the retina and the vitreous body, are meagre in the extreme.

Chapter the Eleventh.—"*The Lens and its Capsule*."—"Perfect transparency of the lens is the most marked characteristic of these structures in a state of health. During the earlier periods of life, they are also quite colorless." We must take exception at this, for perfect transparency cannot exist when the lens is colored, and especially when it becomes "quite an amber color." It is among the mysteries of vision that sight is so well preserved with a high degree of coloration.

The following paragraphs, which will be new to most of our readers, and which embrace a new question in pathology, must not as yet be considered settled.

"With respect to opacities of the capsule—hitherto supposed to play so important a part in cataract—it seems doubtful whether they have any real existence in that disease.

"Stellwag, who has taken advantage of the immense number of *post-mortem* examinations occurring in the General Hospital of Vienna to investigate the histology of cataract, after a careful microscopical examination of about fifty cataracts with apparently opaque capsules, asserts that, in every instance, the opacity was produced by matter attached to the lenticular surface of the capsules; not deposited in the very tissues of the capsules themselves. This matter, which to the naked eye appears identified with the membrane, consists, for the most part, of earthy and fatty substances, firmly adherent, yet separable by careful mechanical or chemical manipulation. The various irregular patches in which the substances arrange themselves, give rise to that marbled or mottled appearance hitherto described as characterizing the mixed, or 'capsulo-lenticular' form of cataract." (Page 200.)

After this follows a suggestion to change the term now employed to express the kinds of cataract. "Nuclear" and "cortical" are proposed as the names for two grand divisions of cataract. But we must pass to—

Chapter the Twelfth, in which is treated "*Glaucoma; Scrofulous, Encephaloid, and Melanotic Deposit.*" There is nothing here, pathologically speaking, that has not been before the public in various forms, but these remarks at the commencement of the chapter are not without value.

"*Glaucoma.*—This has always been a puzzle to the student of ophthalmic diseases. At one time he hears the term 'Glaucomatous' applied to a peculiar reflection from the pupil, which, it is said, appears of a green color, although he may in vain look for anything like the ordinary green of familiar objects. Then he is informed that *γλαυκίτις* means only a 'sea-green'; and this explanation, perhaps, puzzles him still more, if he remembers his schoolboy notion of Homer's *γλαυκῶπις Ἀθήνη*. In fact, the Greek physicians, who invented the word *Glaucoma*, knew nothing of the thing which we now understand by that name. Being ignorant of the anatomy of the eye, they naturally mixed up its diseases together in utter confusion; so that it is almost impossible to understand what they really meant by the terms they employed: nor is it very profitable for us to inquire. We may, for the present, dismiss all questions of etymology, and consider 'Glaucoma' as a convenient term, used, in a purely arbitrary sense, to imply an incurable form of blindness, attended with peculiar morbid changes in all the various tissues of the eyeball." (Page 225.)

Chapter the Thirteenth, under the head of diseases of uncertain seat, includes "long sight, short sight, and inability to distinguish colors."

Chapter the Fourteenth.—"*The lachrymal apparatus.*"

Chapter the Fifteenth.—"*The Eyelids.*"

"The variety of tissues entering into the formation of the eyelids, of course subjects them to a great variety of diseases: but inasmuch as the tissues for the most part resemble those found in other parts of the body, and do not present the peculiarities which distinguish the structures of the eyeball itself, there is no occasion for treating diseases of the eyelids with that minuteness of description which is absolutely necessary when treating of morbid changes in the cornea, the iris, and the lens." (Page 271.)

We are sorry for this, as lid-surgery, if we may so call it, is an important part of ophthalmology. "These deformities" (alluding to surgical affections of the eyelids) "are so various, and require such manifold forms of operation (which cannot be made intelligible without the aid of figures), that I must refer the reader to the practical portions of M'Kenzie and Walton." Surely the student will require more than this. He will desire to know the result of Mr. Dixon's practical labors. Again, "These apertures" (speaking of the puncture) "may be slit up in the manner suggested by Mr. Bowman." How is a student not in attendance on Mr. Bowman's practice to know in what his method consists, especially as it is not to be found in any of the older ophthalmic works? The diseases of the eye are so recognized, and so commonly taught by surgical and medical lectures, and writings, that students are sure to learn something about them. The operative department, however, is comparatively neglected, and left, for the most part, to the teaching of those who make a speciality of ophthalmology; and we deem a book devoted to diseases of the eye that is not ample in this, decidedly deficient.

Our space compels us to move on quickly, and to pass in rapid review chapter the Sixteenth, on "*The diseases of parts surrounding and acting upon the Eyeball*," and to stop only to notice the very indefinite directions given to detect a squinting eye.

"When both eyes appear to be affected with strabismus, and to turn inwards, it becomes a question which eye ought to be operated on. Various optical tests have been suggested to enable the surgeon to decide this point; but it usually happens that a patient, when subjected to any of these tests, is so anxious and embarrassed, that he becomes very liable to a sudden increase of strabismus in the eye which, on ordinary occasions, would be affected in the slightest degree; and from this cause the experiment may fail to infallibly determine the question. I believe the best rule is to watch attentively which eye squints in the more decided manner, when the patient uses both his eyes in his ordinary way, and to operate on that in which the distortion predominates." (Page 304.)

This is worse than useless, and is apt to do harm in diverting attention from those works in which judicious rules are laid down. One reason why the operation is so often unsuccessful, is because of the difficulty of diagnosing the squinting eye, and the sound one being operated on. Besides, the passage implies the frequency of double squint, and this is incorrect. The remainder of the chapters are devoted to a very cursory account of some of the operations required in eye surgery, but only indeed to some of them. The important operations of entropion and ectropion are dismissed in a notice of fifteen lines.

"In the chapter where the appearances of these affections of the lids are described (pp. 274, 275), I have very briefly alluded to the various operations employed for their cure. The main object of the present work being to direct attention to the outward phenomena of those diseases which affect tissues peculiar to the eyeball, I have devoted comparatively little space even to the important operations in which those tissues are concerned. The operations of entropion and ectropion, involving as they do merely such tissues as are met with in other parts of the body, need not therefore here be specially described. The works of M'Kenzie and Walton, already alluded to, may be consulted for fuller details concerning plastic operations on the lids, and other parts adjacent to the eye."

We have carefully read these concluding chapters, very carefully, with the intention, in case we found it, of making an extract of anything that is new, or suggestive, but we found nothing added to what is already written in modern works, and thoroughly recognized by the modern ophthalmic school.

There are a few characters of the work that remain to be mentioned. Some of the chapters are prefaced in the commencement by a description of the healthy appearance, or congenital defects of the tissues, the diseases of which they treat.

There are a few wood-cuts, and a page with lithographs of some of the instruments that were alluded to in the text. Allusion is often made to a "spring speculum." We wonder what the author means?

References are given to such colored representations of disease in the works of different authors, as are thought really useful to the student.

In conclusion, we express our conviction that we cannot find fault with what is written, as it abounds with common sense, is given in a manly, honest, independent spirit, and evidently emanates from an accomplished surgeon; but we must candidly say, that it is hardly enough for the modern student, who is not likely to attend to ophthalmic subjects till he has mastered the elements of his profession. Let us hope that the next edition will be larger. We should be guilty of injustice to our author, did we fail to speak favorably of his remarkably clear, easy, and concise style of writing.

A new method of employing Cauterization in the Treatment of Fissures of the Palate, &c. By M. JULES CLOQUET. ("Archives Générales de Médecine," April, 1855.)

On the 26th of last February, M. Jules Cloquet read a paper before the *Académie des Sciences*, in which there appears to be a very important practical

suggestion. The paper is entitled a "méthode particulière d'appliquer la cauterisation à la réunion de certaines divisions anormales, et spécialement de celles du voile du palais." The plan is very simple. It is to cauterize the angle of the fissure to a very limited extent, and then leave the part to cicatrize. The object to be gained is the gradual closing of the fissure by the necessary contraction of the cicatrix. When the first cicatrix is formed, the angle of the fissure is again cauterized, and the part left to cicatrize; and again and again the process is repeated, until the fissure is entirely closed,—the cauterization of each fresh cicatrix being, as it were, another stitch in a continuous suture.

The short abstract of the paper, from which we take this notice, states, that M. Cloquet had successfully applied this mode of cure in four cases of fissured palate. In each case, there was little or no pain, and no alteration was made, either in the regimen or habits of the patient. In one of these cases 24 cauterizations were employed at intervals of a week; in another case, 20, at variable intervals. In three of the four cases, the actual cautery was used; in the fourth, the acid nitrate of mercury. M. Cloquet prefers the actual cautery, but he thinks that the electric cautery will be preferable to the common hot wire, particularly in the case of very timid patients.

In a word, the operation is one of the simplest possible character. It is altogether devoid of danger, and it may be employed upon the youngest infant. It promises, also, to answer in many cases where it is difficult to keep the edges of the fissure in apposition by ordinary means. It is most certainly an ingenious and happy conception to think of applying to a useful purpose that irresistible process of contraction which takes place in all cicatrices, and which is so often the cause of such terrible deformity!

On Electro-lithotrixy; or the Application of the Mechanical Force of the Electrical Discharge to the Disintegration of Stone in the Bladder. By G. ROBINSON, M.D. (4to., London, Churchill, pp. 16; Pamphlet, 1855.)

The great and diversified powers of electricity have long suggested the possibility of its being employed as a means of effecting the disintegration of calculi in the human bladder, and thus obviating the necessity for the painful and dangerous operation of Lithotomy. But the attempts hitherto made in this direction, have contemplated the solution of the stone through electrolytic action rather than its disintegration by the mechanical force of the electrical discharge. A moment's reflection will, however, suffice to convince us that the force which shatters a steeple or cleaves an oak, is also capable of reducing to fragments the largest urinary concretion. Nor can the author imagine any other than the following sources of objection to the practicability of employing this force for the purpose of breaking down vesical calculi *in situ*, namely—1. The danger to the living structures from the necessity of using a powerful discharge; 2. The difficulty of conveying the force to the required spot, or, in other words, causing the discharge to pass through the calculus. The first objection, is in a great measure met by the fact of our being enabled to regulate with the utmost precision the degree of intensity of the discharge, and it would be almost entirely removed were it possible to apply the disruptive force of electricity without any portion of the body being included within the circuit traversed by the electrical current. The second objection rests upon the mechanical difficulty of bringing the calculus within the direct route of the electrical discharge, but would scarcely apply were it demonstrated that the disruptive effects of electricity can be obtained without any such direct transmission of the current.

"My own attention," he writes, "was some years since directed to the subject by reading an account of the following experiment, first performed by Mr. Crosse:—"Two platinum wires, one-thirtieth of an inch in diameter, were secured to a slip of window glass half an inch wide and four inches long, so that they rested upon the flat surface of the glass, leaving an interval between their points of one-twentieth of an inch. The wires were connected, one with the negative conductor of a powerful machine, the other with a ball to receive sparks from the prime conductor. On placing the glass in a flat dish filled with water, and turning the machine, the glass between the points soon became

fractured, and after 100 revolutions the fracture enlarged, and two small cracks appeared. After 200 revolutions, an excavation was formed, but on the side *opposite* to that on which the wires were tied. After 250 revolutions the glass was completely perforated. Many variations of this experiment were made, in all of which the same kind of mechanical effect was obtained. Even quartz was excavated.

"It being thus shown that a lateral disruptive action takes place within a certain distance of the seat of discharge, the idea at once suggested itself to me, that by using two parallel wires separated at their extremities like those in Mr. Crosse's experiment, and similarly connected with an electrical machine or Leyden jar, bringing their ends in contact with the surface of a calculus, and then allowing a series of moderate discharges to take place between the extremities of the wires, a disintegrating effect would be produced upon urinary calculi of the same nature as that witnessed in glass and quartz. And short of the actual disintegration of a calculus in the bladder of a living person, the following experiments will, I trust, be deemed conclusive on this point.

"Two copper wires, one-twentieth of an inch in diameter, were connected, one with the external, the other with the internal surface of a Leyden jar, having about 400 square inches of internal metallic coating. These copper wires were soldered to platinum wires, half an inch long and one-thirtieth of an inch in diameter. Each wire was drawn through a fine gutta percha tube; and the tubes, having first been placed perfectly parallel, were warmed and gently pressed together, so as to assume somewhat of the appearance of a flexible bougie—the platinum wires projecting beyond the gutta percha to the extent of one-eighth of an inch, and their free extremities being slightly everted and separated from each other by an interval of one-tenth of an inch. In experimenting, the united gutta percha tubes were grasped and the projecting platinum points pressed against the surface of the calculus; the jar was then discharged by another person, and a series of such discharges thus passed between the free extremities of the parallel platinum wires while resting upon the surface of the stone.

"With this simple arrangement, fragments a quarter of an inch long were broken off flints immersed in water, and the same force was applied to urinary calculi with the following results:

"*Exp. 1, June 7.*—A piece of a large lithic acid calculus was placed in a bladder, nearly filled with water, into which the gutta percha bougie containing the wires was then introduced, and the neck of the bladder tied round the instrument. The bladder with its contents being placed on a wet board, the projecting platinum wires were then kept in contact with the surface of the calculus, and the jar discharged. On opening the bladder and examining the stone, it was found to be broken into numerous fragments by the single discharge.

"*Exp. 2.*—A small phosphatic calculus, very smooth and hard, was experimented upon in a similar manner. The first five discharges produced no perceptible effect, but the sixth split it into at least twenty fragments, and many of these, on being slightly pressed between the finger and thumb, readily broke down.

"*Exp. 3.*—A very large oxalate of lime, or mulberry calculus, with projecting tubercles, was similarly tested, and the first discharge produced a small cavity in the surface to which the wires were applied separating a considerable quantity of fine sand; but subsequent discharges did not act so efficiently on this very large stone.

"*Exp. 4.*—On the following day, June 8th, the experiment was repeated in the presence of Messrs. Potter, Rayne, and Furness, surgeons in Newcastle; and a small calculus, removed a few months since by the gentleman last mentioned from a young boy, was, after a few trials, split through the centre, one half being reduced to fragments, and the other exhibiting in its interior a dark-colored nucleus of lithic acid.

"These experiments appear to demonstrate the practicability of applying the lateral disruptive force of the electrical discharge to the disintegration of calculi in the bladder. There can be no difficulty in bringing the end of a gutta percha catheter, conveying two copper wires, in contact with the surface of a stone in

the bladder, and a very simple mechanical contrivance will enable the extremities of the platinum wires to be protruded when the end of the catheter touches the calculus. By employing two wires, one connected with the positive, the other with the negative portion of the jar or machine, not only is the intensity of the discharge increased, but the body is also prevented from forming any part of the circuit, and the risk of injury thereby materially diminished. The bladder used in the above-mentioned experiments was not at all injured, and on retaining a portion of it between the platinum wires, so that the discharge passed through it, no perforation or other destructive effect took place. The gutta serena tubes, having the projecting platinum wires, were placed in the mouth without being in contact with the lips, and a discharge sent through the wires, but there was no perceptible shock. When, however, the bladder containing the stone rested upon the hand, during the act of disintegration, a smart impulse was felt.

"On the whole, I am of opinion that the electrical force, applied in the manner indicated, will be found quite as efficient for the disintegration of calculi in the bladder as the more formidable analogous operation of Lithotripsy, occasionally practised; and, as regards simplicity and security, the electrical apparatus certainly appears preferable to the instruments used for crushing the stone by ordinary mechanical force."

Dr. Robinson also enters into several particulars respecting electricity, and the mode of using it, and he gives a plate of the apparatus necessary; and we recommend our readers to get his pamphlet, and study it well, if they are disposed to carry his suggestion into effect.

Lithotomy simplified; or a new method of operating for Stone in the Bladder, &c. By GEORGE ALLARTON, M.R.C.S., Deputy-Coroner for the West Bromwich District of South Staffordshire. (1854, London, Ash and Flint; 8vo, pp. 80, with plates.)

The operation which Mr. Allarton recommends is a modification of the old Marian operation, which was practised by all the surgeons in Europe, in the sixteenth and seventeenth centuries, and which has been revived in variously modified forms at different times since, particularly in 1843, by Dr. De Bors, of Verona. In the Marian operation a grooved staff is introduced, and *cut down upon in the middle line*, and various instruments are then employed to dilate the opening into the bladder.

Mr. Allarton thus describes his method:

"I introduce a grooved staff in the usual manner, and of the usual size, and confide it to an assistant, with directions to keep it perpendicular and hooked up against the pubes: I then introduce the index finger of my left hand into the rectum, placing its extremity in contact with the staff, as it occupies the prostate, and press it firmly against the staff, so as to steady it, then, with a sharp-pointed straight knife, with tolerably long and rough handle, I pierce the perineum in the middle line, about half an inch above the anus, or at such distance as may appear necessary to avoid dividing the fibres of the external sphincter,—I carry the knife steadily and firmly on till it strikes the groove of the staff, the deep sphincter lying between the knife and the directing finger, which enables me to judge of the distance as the knife passes along. If the incision be not made exactly in the median line, the contracting fibres of the injured muscles draw the point of the knife from its direct line and interfere with the accuracy of striking the staff, hence the advantage of the long rough handled knife, which affords a firmer hold and better purchase. Having struck the groove of the staff, I move the point of the knife along the groove towards the bladder a few lines, and then withdraw it, cutting upwards, so as to leave an external incision of from three-quarters of an inch to one and a half inches, according to the presumed size of the stone—the escape of urine indicates the entrance to the urethra. I then introduce a long ball-pointed probe or wire through the external opening into the groove of the staff, and slide it into the bladder, to sufficient depth to insure its safe lodgment in that viscus, and withdraw the staff. I then well grease the

index finger of the left hand and pass it along the probe, with a semirotatory motion, through the prostate into the bladder; which procedure is achieved without difficulty, and when the stone is free it comes at once into contact with the finger, and, if of moderate size, passes at once into the wound on withdrawing the finger, the patient having power to strain upon and thereby facilitate the extraction of the stone; this last-mentioned power being one of the great advantages of this operation; the incision being made strictly in the median line no muscles are divided, and the integrity of the bladder being preserved, it is under the control of the patient, who exerts, at the wish of the surgeon, a powerful propulsive effort which keeps the stone in or in contact with the internal extremity of the wound, where it is easily seized by the forceps and extracted by mild persevering traction. Now as the aperture is necessarily the size of the finger which produces it, if the stone be large some other dilating power must be employed in addition to the dilating effect of the forceps and stone combined; for this purpose Weiss's three-bladed female dilator, Arnott's hydraulic dilator, or, what is at once ready and effective, the addition of the vulcanized india rubber finger stalls one over another until the finger is sufficiently enlarged for the purpose, the outer covering being well lubricated with lard before being introduced. But Arnott's dilator, where it can be procured, is by far the most efficacious though not the most expeditious means. Should the stone be of unusual size, it may be readily broken by a short, strong and straight lithotrite, or by a strong and suitable pair of forceps closed by a screw, if the stone be soft and yielding—I say readily, because the stone is, in this operation, within so short a distance of the external aperture that mechanical aid can be brought to bear upon it without the slightest difficulty or risk; again, should the stone resist the efforts to crush or extract it, the wound can be readily enlarged upwards or downwards, by dividing the deep fascia, or even be converted into a bilateral aperture sufficient to extract any average sized stone. I believe the deep fascia to be the great obstacle to the extraction of the stone: I have observed that it acts like a ligature round the finger or forceps, and resists the extraction of the stone. The patient suffers little in this operation, and merely complains of the pricking-stabbing sensation of the first thrust of the knife, the subsequent extraction of the stone does not appear to cause pain; he passes his urine freely by the urethra as well as by the wound, from the time of the operation, and there can be little doubt that the wound might be nearly healed by the first intention with perfect safety. Two of my patients were up and out the day after the operation, and one was walking out on the third day (a cold, snowy, frosty day). The wound left entirely to nature, without tents, &c., heals in about three weeks. The patient, from the completion of the operation, excites no anxiety for his safety; he usually sits up and moves about on the following day, and I cannot well imagine the advent of inflammatory or other bad symptoms.

"The three principal features in this operation, as differing from De Bors's, are—First, the introduction of the finger into the rectum as a guide, by which the staff is held steady, and the course of the knife guided, so as not to approach too closely to the rectum and to insure the striking of the groove of the staff on the first attempt.

"Secondly. The cutting on the staff daggerways, and completing the incision at one introduction of the knife.

"Thirdly. The complete withdrawal of the staff on the introduction of a long probe, which renders the chance of lacerating the prostate less, on the forcible introduction of the finger."

The advantages of the operation, according to Mr. Allarton, are—

"The impossibility of missing the bladder—the smaller amount of cutting than in the lateral operation—the neck of the bladder being uninjured—the smaller amount of blood lost—the prostate being merely dilated, not incised—the urine being at once passed by the urethra as well as by the wound unless union by the first intention be effected—the facility with which the stone is reached, the patient being able to propel it towards the wound—the very short distance between the external opening and the interior of the bladder—the capability of breaking or crushing the stone, and washing out the bladder and freeing it from any minute particles—the small amount of pain—the absence of

danger from urinary infiltration—no muscle or vessel of any consequence being divided, no subsequent imperfection can arise—no danger of wounding the rectum—the rapid recovery, the patient being able to go about the next day—and the great facility with which the operation can be done by any practitioner of ordinary skill and ability.”

One argument in favor of the median operation strikes us as of much force.

“It is evident,” writes Mr. Allarton, “that all the muscles forming the floor of the pelvis act in unison—to divide any one of them, or the fascia which supports them, destroys the integrity of the whole; hence we find that the patient, in the lateral operation, has not the same power to strain and cause the bladder to expel its contents—the *point d'appui*, of one side, is gone—the injured side ceases to be antagonistic to the other, hence the bladder recedes before the finger, and before the forceps, requiring the utmost stretch of finger, sometimes, to reach the stone; whereas, in the median operation, the finger readily explores the bladder, and the patient, by his voluntary efforts, can propel the stone towards the aperture, and materially assist the operator in its extraction. Any gentleman who has once explored the wounds made in the two operations, with his finger, will not fail to perceive and acknowledge the great advantage of the median over the lateral operation.”

Dr. De Borea says that of 100 cases operated upon by Dr. Manzoni and himself, only one proved fatal, and that from causes irrespective of the operation. Mr. Allarton has operated thrice, the first time about fourteen years ago.

Mr. Allarton also describes an instrument which will insure the right position of the incision, and which may be used by persons who cannot trust themselves to use the simple knife. He also enters into many details, for which we must refer to the book itself. The whole question is one of much importance, and surgeons will do well to read this small work.

A treatise on the Diseases, Injuries, and Malformations of the Rectum and Anus. By T. J. ASHTON, Surgeon to the Blenheim and Western Dispensaries, &c., &c. (London, Churchill; pp. 350.)

It is a remarkable fact in connection with the professional literature of the present day, that a class of diseases which are so extremely prevalent among all classes of society, and especially perhaps among those who belong to the upper and middle ranks, as are diseases of the rectum and anus, should have had so little attention paid to them by medical and surgical writers. We do not say that these diseases have been neglected by surgeons, although perhaps it would not be far from the truth to affirm that they have not received the attention they deserve; but it is nevertheless a fact, patent to members of the profession, that there has not been published in this country a work at all entitled to be considered a treatise on these affections which they could consult with the hope of finding some notice, or it may be some record of experience, concerning any contingency ordinarily prone to occur at the lower end of the alimentary intestinal tube. One cannot but be struck with the contrast which is thus presented with the state of things which exists in relation to its oral extremity. The human mouth has no ailment that we cannot summon a host of practitioners to palliate or cure. Every street of this metropolis contains a specialist, whose function it is to render assistance in every disorder occurring there from infancy to old age. Yet we are not quite certain that the relievable disorders of the mouth so transcendently surpass, in number or importance, those which affect the less dignified and more neglected outlet.

There are many reasons, however, why the affections of the rectum have been allowed by the regular members of the profession to remain somewhat in obscurity. It is to be much regretted that due attention has not been paid them; and we welcome the proof which this volume affords us, that we shall not in future have to complain of the very obvious want in our literature which has hitherto subsisted.

Mr. Ashton's work is comprised in twenty chapters, in the course of which he deals with the following subjects;—Irritation and inflammation of the anus; contraction, fissure, and neuralgia affecting this orifice; inflammation, ulceration,

and prolapsus of the rectum; hemorrhoidal affections in all their varieties; enlargement of the hemorrhoidal veins; abscesses in the neighborhood of the rectum; fistula in ano; polypi, structural and malignant disease of the rectum; foreign bodies impacted in the rectum; malformations; and lastly appears a chapter on habitual constipation.

Our space will not permit us to give any very extended analysis of this work. In reference to those points which appear to be most obvious, and on which the greatest stress is laid, the importance of constitutional treatment in hemorrhoidal affections is one which invites attention. Mr. Ashton evidently inclines to a strong faith in its complete efficiency, in a large majority of cases, to remove the symptoms complained of by the patient, and in all to palliate them very considerably. Thus he says—

“The general treatment of hemorrhoidal affections must consist in enforcing a strict observance of moderation in diet, due attention being paid both to the quality and nature of the aliment, as well as quantity; all stimulating food and beverages must be forbidden, and only that allowed which is unirritating and easy of digestion. This is a matter so important, not only in the diseases herein treated of, but in all others, that it would be well to give a patient written instructions on this point, in the same manner as when medicines are directed to be taken. The bowels must be regulated, and constipation combated, by deobstruents, laxatives, and stomachic aperients. If fecal accumulations in the colon exist, these must be removed by emollient enemata; in many cases the use of O’Beirne’s tube will be highly serviceable in dislodging the excrementitious matter. When the secretions and excretions of the chylipoietic viscera are depraved or deficient, means must be adopted to restore them to a healthy state; for this purpose a few grains of blue pill with one of powdered ipecacuanha should be directed to be taken at bedtime, or mercury with chalk and extract of taraxacum may be substituted; and in the morning one of the following draughts should be taken:

R Infusi Sennæ co., ʒvj;
Infusi Gentianæ co., ʒv;
Tinct. Card. co., ʒj. Fiat haustus.

R Decocti Cinchonæ,
Infusi Sennæ co., aa ʒvj. Fiat haustus.

“If these are not sufficiently active, sulphate of magnesia, potassio-tartrate of soda, or sulphate of potash may be added. Castor oil is a most useful laxative in these diseases. A teaspoonful of the following electuary, taken either at bedtime or early in the morning, answers very well in moving the bowels once or twice:

R Confectionis Sennæ,
Sulphuris Loti, aa ʒj;
Pulveris Jalapæ, ʒj;
Pulveris Zingiberis, ʒss;
Sodæ Potassio-Tartratis, ʒiv;
Syrupi Zingiberis, q. s. ut fiat electuarium.

“The addition of two or three drachms of copaiba to the above will be very beneficial in many cases, but it renders the electuary so nauseous that some patients cannot take it; if, however, it is made into boluses and wrapped in wafer-paper, it may be swallowed without being tasted.” (pp. 119–21.)

Further advice respecting regular exercise, clothing, ablutions, &c., follows, for which the work itself should be consulted. The importance of these hygienic and dietetic measures has appeared in our own practice so great, that we have deemed it advisable to invite attention to views which appear extremely sound and noteworthy in relation to the subject.

Mr. Ashton appears to have paid especial attention to that distressingly painful affection, “fissure of the rectum.” His views of treatment are not quite consonant with those which have of late been generally accepted. The point in question is referred to as follows:—“My experience fully justifies me in stating

that, in the majority of recent cases, it is not necessary to have recourse to the operation, although some of high authority in the profession assert that incision is the only effectual remedy, and that all sorts of applications, soothing and irritating, are unavailing." The author recommends great care in keeping the parts clean, the use of astringent lotions, and, in the event of the failure of them, "the free application of the nitrate of silver, at intervals of a few days, for two or three times," stating that this method "will generally induce a healthy reparative action in the part." In proof of these views several illustrative cases are subjoined. When, however, the ulcer still remains in spite of the foregoing treatment, the division of its surface, but short of a section of the sphincter, is advocated, by means of an incision directed from within outwards (pp. 36-38).

Passing on to the chapter which is devoted to the subject of fistula in ano, Mr. Ashton thus alludes to a question, often much discussed, of the situation of the internal orifice in fistula.

"To M. Ribes attaches the merit of investigating the question, and showing that the internal opening is never at a greater distance than an inch and a quarter, from the anus. Sabatier first called attention to the fact. Ribes examined the bodies of seventy-five people who had fistula at the period of their death; in the majority the internal opening was just above the point of junction of the mucous membrane of the intestine and integument of the anus; and not in a single instance did he find it situated at a greater distance from the anal margin than five or six lines. Since the publication of the result of his observations, they have been verified by several eminent surgeons; yet the practical deductions therefrom are not always at the present day properly considered or acted upon by all practising the surgical art." (pp. 225-26.)

The principle derived from the fact so substantiated of course relates to the method of dividing the sphincter muscles and other tissues intervening between the fistulous sinus and the cavity of the bowel, only as high as the situation of the internal opening, and no higher. Respecting it, Mr. Ashton remarks—

"Mr. Syme, the eminent professor of clinical surgery, of Edinburgh, has for many years inculcated and acted upon these principles in his practice, and testifies to their perfect success. I have never carried my incisions higher, and have never been disappointed in the result. But some surgeons of great ability and eminence in the profession, and writers of high authority, have pursued the practice of Mr. Pott." (p. 243.)

And the works of some living authors are quoted, in which it is still recommended to pass the probe-pointed bistoury to the extreme end of the fistulous track, and to divide the intervening partition to the very bottom, irrespective of the situation of the internal opening.

That the performance of the cutting operation is not always absolutely necessary for the cure of fistula, is one of the results of our author's observations. On this point he writes as follows:

"If the health of the individual is good, and all circumstances are favorable, a fistula may be sometimes made to heal without an operation. Sir Astley Cooper mentions, in his lectures, two cases which were cured by injections. I have succeeded in several instances in healing them without operation, though the cure has been somewhat tedious. When a patient objects to the necessary operative proceedings, we may try other means; constant pressure must be made upon the track of a sinus, which should be injected with a solution of sulphate of zinc or copper, or nitrate of silver. When the cavity of the fistula has been hard and callous, I have cauterized it throughout its course with nitrate of silver. The following is the manner of doing it: Having ascertained the precise direction and sinuosities of the fistula, a probe is to be bent into the form that will most readily pass; it should then be coated by dipping it into the caustic, melted in a watch-glass over a spirit lamp; thus armed, it must be rapidly passed into the fistula, and allowed to remain a few seconds, and then withdrawn. A simple poultice or water-dressing should be applied for the first twenty-four hours, and after that pressure must be made along its course. During the treatment the bowels must be kept open, and soap and water used to the anus night and morning. By these means we shall sometimes succeed in healing the fistula; but it is a plan not to be relied upon. An isolated case will occur, now and then, in which a fistula will close without any surgical interference." (pp. 237-8.)

A case illustrating this remark is then related, which Mr. Ashton saw with Dr. Quain, of the Consumption Hospital; but the author warns us against the belief that fistula can frequently be cured without a surgical operation.

We must now take leave of the volume before us, recommending our medical brethren who are in the habit of meeting with complaints of the rectum (and who does not?) to consult it for themselves. We regard it as a most useful and valuable addition to our literature, and are certain that it will conduce to its author's reputation as a practical surgeon, especially in connection with that department of our art of which it treats.

An account of the cases of Dislocation of the Femur at the Hip-joint treated by manipulation alone (after the plan proposed by Dr. W. W. Reid, of Rochester, U. S.), in the New York Hospital, during the past two years. By Dr. THOS. M. MARKOE, Surgeon to the New York Hospital. ("New York Journal of Medicine," Jan. 1855.)

In the Transactions of the Medical Society of New York, for 1852, is a paper by Dr. W. W. Reid, of Rochester, U. S., entitled "Dislocation of the Femur of the dorsum ilii reducible without pulleys or any other mechanical power." In this paper, Dr. Reid shows that the dislocation in question can be reduced "by flexing the leg on the thigh, carrying the thigh over the sound one, upward over the pelvis, as high as the umbilicus, and then by abducting and rotating it." He also describes the steps by which he was led to adopt this mode of practice, and relates five cases in which the practice was successfully carried out.

Since this time, this plan has been successfully carried out in several instances, and the paper now under consideration contains fourteen cases, occurring in the New York Hospital, which fully bear out Dr. Reid's expectations. Dr. Markoe, indeed, thinks very highly of the merits of the plan, and we are quite of the same opinion.

Before relating his cases, Dr. Markoe shows that all the credit of the suggestion cannot belong to Dr. Reid. More than once the head of the thigh bone has slipped back accidentally by moving the limb about either before or after extension; and Chelius gives an outline of the views of four writers (and these not all)—Wattman, Kluge, Russ, and Colombat—who have proposed to reduce the dislocated hip by the hands alone of the surgeon and his assistants, without the aid of pulleys, or of any kind of forcible extension.

The plan failed in three out of the fourteen cases which are related in the paper under consideration, but Dr. Markoe thinks this would not have happened if he had then known as much of the mode of manipulating as he knew subsequently. We give seven of these cases, including the three failures.

CASE 1.—The first opportunity which presented itself for the trial of the new method, was in the case of an Irish laborer, who was brought into the New York Hospital, November 30th, 1852, with a luxation of the right thigh. He had been struck, a short time before admission, by the cow-catcher of a passing railway train, and thrown some distance, and in his fall, probably, the accident was produced. The symptoms were those of the dislocation of the dorsum ilii, the head lying rather lower down and nearer the ischiatic notch than usual. The thigh was shortened about two inches, extended across the other, with the ball of the great toe of the injured limb touching the instep of the other foot, fixed in its position, and the head of the femur was felt in the position above described when the thigh was rotated on its axis. In addition to this injury, he had received a compound fracture of the left leg, three inches above the ankle, together with a good deal of bruising of other parts of his body. The patient was etherized to the extent of complete relaxation, and Jarvis's adjuster was applied. It broke on the first trial of extension, and was laid aside. This mischance suggested the trial of Dr. Reid's plan, which was accordingly adopted. The operator, Dr. Buck, after bending the leg upon the thigh, gradually adducted the thigh, while at the same time it was being flexed upon the trunk. Carrying the limb thus bent at the knee, and strongly adducted, over the sound thigh, by a gradual sweep over

the abdomen, and then slowly and steadily abducting the limb so as to carry the knee outwards, making at the same time a rocking motion by moving the leg backward and forward, had the effect of dislodging the head of the femur from its new position, and making it approach the acetabulum; but it did not enter the socket. From the position above indicated, the limb was now brought down slowly towards a straight position, still kept in a state of forced adduction. This last manoeuvre seemed to have a very powerful influence in forcing the head towards the acetabulum, but the whole proceeding was completed without success. It was observed, however, that the head had been moved a little higher on the dorsum than it was before. The same manipulation was now again practised more deliberately and more carefully than before, and as the limb was being brought down abducted, we had the satisfaction of seeing and hearing the reduction effected, by the head of the bone slipping into its socket. All deformity had disappeared, and the motions were free in all directions. The other injuries were properly attended to, and the recovery from the effects of the luxation was rapid and satisfactory. He finally recovered from his compound fracture also, and left the hospital with a good leg and a perfect hip.

CASE 2.—An Irish laborer, æt. 25, received an injury of his right hip, and a fracture of one of his clavicles, by being thrown from a railroad car, while it was in motion. He was received into the New York Hospital, December 8th, 1852, under the care of Dr. Halsted. On examination, the injury to the hip proved to be a luxation of the femur upwards and backwards on to the dorsum ilii. The patient was placed immediately under the influence of ether, and the reduction was attempted by a procedure nearly the reverse of that above described, in Case 1. The leg being flexed upon the thigh the limb was flexed upon the trunk and carried up in a state of abduction, then across the abdomen, and being fully abducted, was, in that state, brought down to the straight position. The effect of this mode of operating, which is almost precisely that said to have been employed by Professor Nathan Smith, was to throw the head of the bone forwards, under the anterior superior spine of the ilium, and it was quite evident that a very little more force in the same direction would have brought it upon the pubes. This plan was therefore abandoned, and Reid's manipulation was tried carefully and without the employment of much force. On the first trial it was successful, the bone being reduced with an audible snap, as the limb was brought down in a state of abduction. The recovery was rapid and perfect, and he was discharged, cured, January 15th, 1853.

CASE 3.—Charles O. Merritt, a sailor, æt. 37, of a stout vigorous frame, was admitted to the hospital with a luxation of the femur, of twelve weeks' standing. Attempts had been made, by an excellent surgeon of this city, to reduce the bone, but without a satisfactory result. A very careful examination was given to the limb by all the surgeons of the hospital who were present, and all agreed that the head of the femur was thrown upon the dorsum of the ilium, in the usual situation; but some doubt existed whether there might not also be an injury of the acetabulum itself. The patient being fully etherized, Reid's manipulation was tried, and, on the first trial, failed, the head seeming to remain nearly in the same position it occupied before the operation was commenced. Dr. Watson, under whose care the patient was, now made a second more careful effort, using more force in making all the movements, but being particularly careful to make forced abduction while bringing down the limb from extreme flexion to the straight position. As the limb was thus descending, slight rocking motions being at the same time employed, the reduction was suddenly accomplished, the head of the bone being felt, or heard, by a great number of persons, to slip into its socket. The limbs being laid side by side, all deformity had ceased, and all present were satisfied that the reduction was complete and perfect. The patient's knees were bandaged together in the usual manner, and he was placed in bed with rather more care than usual, but in less than an hour it seemed as if the joint had lost its natural appearance again in a slight degree, and the apparatus was tightened. By next morning, however, it was too evident that the original displacement had again occurred, and to its fullest extent. This had taken place in spite of the greatest quietude on the part of the patient, who was a very intelligent, tractable person, and fully aware of the importance

of keeping the joint unmoved. The manipulations were again tried several times, but without effect. The head of the bone seemed to move about freely in all directions, but could not be brought into the acetabulum. The limb was put up in the straight apparatus which we usually employ for fractures of the thigh, and extension, by the adhesive straps, was kept up so as to keep the parts, as nearly as possible, in proper position. A good deal of stiffness and swelling of the joint followed, which, however, subsided, and he was allowed to go about on the 30th of January. He finally gained about as much use of the joint as if there had been a fracture of the cervix femoris. I am informed, by Dr. Buck, that he has since gained a very excellent use of the limb.

CASE 4.—John Kelly, a laboring man, *æt.* 21, was admitted May 22d, 1853, having been knocked down by a horse-car, by which a luxation of the left hip had occurred into the ischiatic foramen. The limb was shortened about one inch, toes turned inward, and the head of the bone felt in its new situation. The reduction was attempted by the mode described above, the man being fully relaxed by ether. The effect of the first attempt was to throw the head on to the obturator foramen; making the limb longer than the other, and producing the deformity characteristic of that dislocation. From this point, by a slight alteration of the movement, the head could be made to slip back to its original position. Between these two points it could be made to play backwards and forwards, but would not enter its socket. Dr. Post, in whose charge the patient was, then employed the usual mode of reduction, from the foramen ovale—viz., extension of the limb, combined with a lifting of the head of the bone over the edge of the acetabulum, by the help of a folded sheet passed round the upper part of the thigh. This proved successful, without resorting to the pulleys. In this case the cure was very slow, and he left the hospital with some degree of pain and swelling about the joint. I learnt that an abscess formed in or about the joint, which was opened; and when I saw him a year after, there was every appearance of seated morbus coxarius.

CASE 5.—Michael Delaney, a boy *æt.* 8; was admitted into the house June 29th, 1853, having received very severe injuries in falling from a ladder, at the height of the third story of a house, to the ground. There was found to be a bad compound fracture of the right thigh, and simple fracture of the left. When laid upon a bed, and his clothes removed, the right thigh, which was the seat of compound fracture, was found to be in an extraordinary position. It lay obliquely across the abdomen of the boy, with the leg and foot lying up by the axilla of the left side. On examination, it was discovered that this singular position was rendered possible by the fact that the head of the femur was dislocated backwards and upwards on the dorsum ilii. The house surgeon, to whose care the case fell on admission, took the injured limb in his hands and very carefully carried it over the abdomen to the right side, and then abducted it and brought it down towards the straight position, thereby completing the steps of Reid's manipulation, which accident had already commenced. In doing this, the head of the bone slipped into its place, and the hip gave no further trouble. The fractures of both thighs went on favorably towards a cure, and he was discharged well, August 23d, 1853.

CASE 7.—Francis Cotbunger, an Irish turner, was admitted to the New York Hospital, December 12th, 1853, with a dislocation of the right hip. The accident had occurred about four weeks previously, and had been treated in the country, as a sprain, by leeches, &c. The limb was lengthened, the toes everted, and the whole limb stood off from the body abducted, and slightly flexed, symptoms which clearly showed that the head of the bone was upon the foramen ovale. The patient being fully brought under the influence of ether, a manipulation the reverse of Reid's was employed by Dr. Halsted. The leg being bent upon the thigh, the thigh was gradually flexed upon the trunk until the knee touched the thorax. The limb was then brought down, forcibly adducted, into the straight position. By this the head of the femur was moved from the foramen ovale on to the dorsum ilii. Being in this situation, Reid's method was adopted, with the effect, however, of bringing back the head to its original position on the foramen ovale. By a repetition of the first manœuvre, it was again thrown on the dorsum, and from there, by Reid's plan, again thrown back

upon the foramen. After repeated attempts, the bone was finally reduced by the pulleys from the dorsum in the usual way, this being the only instance in which the pulleys or Jarvis's adjuster have been used, since our attention has been called to the new plan. It will be noticed, however, that the limb was every time brought down in a state of forced abduction; the moderate abduction found successful in Gallagher's case, No. 6, was not tried. A good deal of swelling and pain in the joint followed these various operations. He was up and about, however, by the 5th of January, and on the 13th he was discharged, cured.

CASE 14.—Patrick Barry, æt. 42, was admitted to the New York Hospital, October 23, 1854, with a dislocation of the left femur, which had occurred seven weeks previously, by a fall from a rail-car while it was in motion. The symptoms were unequivocal, the limb being shortened $1\frac{1}{2}$ inches, the ball of the great toe resting on the instep of the sound foot, and the head of the bone being distinctly felt upon the dorsum of the ilium. The patient was a man of good muscular development, but the injured limb was somewhat wasted and flabby from inaction. Two days after admission he was put under the influence of ether, and Reid's manipulation was tried. The head descended as usual, until it came opposite to the lower margin of the acetabulum, but from that point, as the limb was brought down, it slipped on to the foramen ovale. The manipulation was repeated several times, with all care, varying the degree of abduction on the various trials, but without success. It was impossible to make the head rise over the lower border of the acetabulum so as to slip into its place. After numerous thorough and careful trials, the manipulation was abandoned, and the pulleys ordered to be applied. Before this was done, it was thought best to place the head of the bone on the foramen ovale, and from that point to try and reduce it by the usual method recommended by Sir Astley Cooper. The head was accordingly placed on the foramen, and while the upper part of the thigh was grasped by an assistant and lifted strongly outwards, I took hold of the ankle and made extension and adduction. The head seemed not to move at all under this force, and while making strong adduction a crack was heard, everything became loose about the joint, and, on examination, it was evident that a fracture of the cervix had taken place, leaving the head in the foramen ovale. There was nothing further to be done but to put the limb up in the straight apparatus, hoping that, if we could obtain union, he would have as useful a limb as those ordinarily left by fracture of the cervix, and certainly a better limb than if the dislocation had been untouched. Thus far, November 25th, everything has gone well, and promises union, with a shortening of about an inch. I am sorry that we must accept this case as one of failure of the new plan after what we considered a fair trial; for myself, however, I do most profoundly believe that it failed simply because we have not yet learned enough about the manipulation to adapt it to the condition of parts concerned in this particular instance. That we shall yet acquire that knowledge, I see no reasonable ground to doubt. With regard to the fracture of the cervix, we were all surprised at the slight amount of the force which was competent to produce such a mortifying accident. It adds double force to the caution given above, when speaking of the possibility of that accident, and it is not a little remarkable, that the paragraph containing that caution was written on the very morning of the day when the production of the fracture verified the necessity of the warning. Dr. Watson, in a note to me, speaks of a fact, which he says, "I have, on undoubted authority—viz., from one of the professors in the School of Medicine in Toronto, Ca.—that an accident, similar to that of Case 14, occurred in that city, while the surgeon was attempting to reduce a luxation of the hip by Reid's method." Finally, it must be observed that the new plan is entitled to none of the blame of the fractured cervix. The accident took place after Reid's manipulation was abandoned, and while we were attempting the reduction according to the old established and classical method.

"With regard to the rationale of the process," writes Dr. Markoe, "most of those who have written on this matter are in the main points agreed. The head of a dislocated femur is retained in its new position by a mechanism which does not exist in any other joint, and which is produced by the fact of the mus-

cles not being inserted into the head, but into the trochanter, nearly three inches from the head, and that from this point of principal muscular insertion the neck goes off at a large angle from the axis of the shaft. From this, it happens that when the head of the femur is thrown out of its socket, the trochanter no longer stands out more prominent than before, but being held firmly by the muscles which are inserted into its base, is prevented from rising any more than enough to let the head out of the acetabulum, while the head and neck, slipping to the one side or the other, are found lying in such a manner that the side of the head, neck, and trochanter, are in contact with some part of the outer surface of the pelvis, varying, of course, in the different forms of luxation. This being borne in mind, it will be clear that any attempt at reduction, which merely brings the head of the bone to the acetabulum, will not succeed in making it enter that cavity, because of the lying-down position of the neck and trochanter against the side of the pelvis. We need, therefore, not only to bring the head over the socket, but at the same time to raise up the trochanter and neck, so as to allow the head to enter. Now, in the ordinary methods of reduction, this raising up of the trochanter, so as to put the neck in the proper direction for the head to enter its socket, is done first, by the action of the pulleys, and the approximation of the head to the socket is done second, by the continuation of the extension. This raising of the trochanter is, of course, opposed strongly by the muscles inserted into its base, causing the head to be pressed more and more firmly against the pelvis, and increasing the friction, and thereby causing by far the greater part of the difficulty in bringing down the head to the level of the acetabulum. It is in this principally, and I am myself disposed to say only, that any active muscular contraction opposes the reduction of a dislocation of the hip-joint. True, the large muscles around the joint are thrown into action as soon as extension is made; but this is an action excited by the extension, and that it is a very feeble opposing force is evidenced by the facility with which these muscles give way to the force of a single unaided arm, when a fracture of the neck of the femur is concerned, in which, of course, none of the friction alluded to can occur. This comparative action of the muscles, in fracture and in dislocation, is very strongly and appropriately insisted upon by Dr. Reid.

"The process by manipulation avoids this main difficulty, and, as it were, eludes the opposition of the muscles. The trochanter, being fixed by the insertion into its base of the pyriformis, the two obturators, the gemelli, and the upper part of the quadratus, acts as a fixed point, or fulcrum, upon which, by moving the limb, the head of the bone can be made to describe a circle round the fulcrum. When we remember that this fulcrum is not, strictly speaking, a fixed point, but has a certain degree of motion of its own, we can easily see how, by means of this movable fulcrum, the head of the bone can be placed, by varying the motions of the limb, on almost any point within two inches around the acetabulum, and of course, over the acetabulum itself. If this manipulation is made in such a way as not to raise the trochanter from lying against the pelvis, then, when the head comes over the acetabulum, a slight rotation, such as is given by the rocking motion employed, will sufficiently raise the trochanter to let the head slip in without provoking to opposition the trochanteric muscles, and if the movements be made in such a direction as to relax the stretched muscles, the whole may be accomplished without calling forth the slightest muscular opposition from the beginning to the end of the procedure. This principle in its application to the different forms of dislocation, presents some variations. In the dislocations on the dorsum, and on the ischiatic notch, for their mechanism is for our purpose identical, the principle has its best illustration; and if any one will take the skeleton or the dead subject, and go through the process, he will perceive that, by adduction, the tense rotators are relaxed, and that, by flexion of the thigh upon the trunk, the head is caused to pass down behind and below the acetabulum, and then, by carrying the knee out so as to abduct the limb, that the head comes toward the lower portion of the acetabulum, where its margin is least prominent. At this point, I wish it to be observed, that our mode of procedure varies a little from Dr. Reid's. He recommends, when the head is brought by abduction close to the lower edge of the acetabulum, that, by the rocking movement already described, it be caused

to slip in. This is well, and will probably answer in many cases, but it failed us so completely from the first, that we were led to add the bringing down of the thigh to the straight position in a state of abduction, still keeping up the rocking motion, and it has been uniformly in the act of thus bringing down the limb that the reduction has been accomplished. On looking at the parts in the dead subject, it will be seen that this movement of the limb, when the head has reached the lower margin of the acetabulum, tends directly to roll the head upwards over the edge and into the socket. The mechanism of the reduction from the foramen ovale has already been alluded to. I do not know of any case of reduction from the pubes."

In conclusion, we have to thank Dr. Markoe, on the part of English surgeons, for having so ably brought this important operative process before the attention of the profession.

1. *On Excision of the Knee-Joint.* By R. G. H. BUTCHER, Esq., Surgeon to Mercer's Hospital, Dublin, &c. (Dublin Quarterly Journal of Medicine, Feb. 1, 1855.)
2. *On Excision of the Knee-Joint.* By Professor SYME. (Lancet, April 21, 1855.)

1. In this article, Mr. Butcher relates a case in which he excised the knee-joint, and he makes this the text of an elaborate essay upon the subject. He gives summaries of all the cases in which the operation has been performed, and states the whole question with fulness and explicitness. He has also been at the pains to correspond with several surgeons who have had actual experience in the operation, and his pages give the results of this correspondence. Altogether, indeed, he has produced a most complete and valuable essay, and we strongly recommend all those whose opinions are yet undecided upon the question of which it treats, to make themselves acquainted with it without delay.

We do not intend to enter into the particulars of the cases cited, not even of Mr. Butcher's; for so many cases have been already recorded, that it is no longer necessary to do this. All, indeed, that we need say of this case is, that the patient was a man, æt. 33, who had suffered from carious disease of the knee since childhood; that he was hectic and emaciated in a high degree at the time of the operation (Jan. 20, 1854); that he was in a state of dangerous prostration for three days after the operation, and that he only rallied by dint of liberal supplies of wine and food and opium; that the joint was free from all uneasiness, and perfectly firm, and the patient able to get about, with the assistance of a crutch, on the 20th of July; and that he left the hospital, on the 5th of September, quite well, except that there was still some discharge from one of the old sinuses. What we intend to do is to state the simple facts in their simplest guise, and leave our readers to form their own opinions upon them.

Mr. Butcher divides the institution of this operation for excision of the knee-joint into two distinct epochs—the first comprising all the cases operated on from the time of Park's first case, in 1781, up to the time of its abandonment, after Mr. Syme's failure in 1830; the second, including all those from the period of its revival by Mr. Fergusson, in 1850, up to the present time.

The following is a Table of the Cases operated on within the first epoch:

Operation.	No. of Cases.	Results.
Mr. Park, .	2	1 cured, 1 died.
Filkin, . . .	1	Cured.
The Moreaus,	3	1 cured, 1 died from operation, 1 from dysentery when the limb was nearly well.
Mülder, . .	1	Cured of operation, died of tetanus after delivery.
Fricke, . . .	4	1 cured, 3 died.
Textor, . . .	2	Both died.
Jaeger, . . .	1	Cured.
Roux, . . .	1	Died.
Crampton, .	2	1 cured, the other recovered from the operation, but was not cured.
Syme, . . .	2	1 cured, 1 died.

"On superficial inspection of this table, the results of the operation on the whole will appear decidedly unsatisfactory. However, on closely analyzing the fatal cases, some will be found to bear but little upon the question of excision. Objection may be taken to Moreau's first case, for the patient died of epidemic dysentery. Immediately before he was attacked, his condition was most satisfactory; and the following is the statement made by Moreau: 'The consolidation of the bones was such that I left the limb at liberty in bed; the patient moved it about at his pleasure. I used the plank only in getting him out of bed. In short, I flattered myself that I should be able to make him walk upon crutches in a month or six weeks, but an event with which my operation had nothing to do deprived me of that satisfaction.' Again, in Mûlder's case the patient died of tetanus, after delivery; a result which cannot fairly be ascribed to the particular operation executed. Every practical surgeon is aware that it may supervene after amputation. To support this view, I may here mention that Samuel Cooper gives a case where it came on after amputation of the thigh. And it may not be known to some, that the melancholy death of the late Earl of Darnley was from tetanus, consequent on having accidentally chopped off two of his toes with an axe. In some habits, a simple incised wound may give rise to tetanus. Cooper states that, 'in St. Bartholomew's Hospital it once followed the operation of removing the breast.' It likewise has been known to occur after the operation for hernia, and that required for ligaturing the larger arteries; these facts, then, forcibly substantiate the above view. After child-bearing it occasionally comes on; and to this cause, I think, we should attribute the death in Mûlder's case. Sir Philip Crampton, in his remarks upon the first case in which he operated, admits that it 'was one to which the operation of excision was not applicable.' 'The disease had proceeded too far; for even had it been possible to have removed the whole of the diseased bone, and that union had taken place between the femur and the tibia, the limb, from its shortness, would have been useless. Add to this, that the highly scrofulous constitution of the patient, as evinced by the open sores on the hand, and ultimately by the disease of the lungs, was in the highest degree unfavorable to the restoration of the healthy action in the constitution and in the part which was essential to the reunion of the bones.' Why excision was ever performed in this case I cannot conceive; a faulty diagnosis might certainly have been made, but when once the bones were exposed, an opportunity was afforded of rectifying the error by amputation. 'For the extent of more than three inches above the condyles the femur was without periosteum, the purulent matter lying in contact with the naked bone.' And when, upon the saw being applied, and the section completed, here 'the cancelli of the cut surface of the femur were diseased and filled with pus, and the periosteum posteriorly detached from the bone, requiring an inch and a quarter more of the femur to be cut off.' Thus six inches of the femur were taken away, together with the articulating surface of the tibia, and 'about half an inch of the head of the tibia, the cancelli of which were loaded with lardaceous matter and with pus.' Every surgeon, I think, will agree with Sir Philip Crampton, that 'the case was one to which the operation of excision was not applicable.'

"Mr. Syme was the first surgeon who excised the knee-joint at the tender age of childhood. I think it very questionable how far the fatal issue in his second case should be ascribed to the operation of excision. The surgery of the case is imperfect and bad; for *after* the operation the limb was not placed in proper position, and the child was subjected to additional violence in eleven days after the first operation. 'On the 6th of January,' writes Mr. Syme, 'in order to prevent displacement of the bones, which all our efforts had been insufficient to effect completely, I cut away about two inches of the femur with the pliers, and then observed, with much concern, that the bone was denuded beyond the farthest extent to which my finger could reach. The patient began to sink soon afterwards, and died on the 8th.' The result here might have been anticipated; for it was scarcely to be presumed that while the child lay prostrated by the fever of one severe operation, she could, with impunity, bear a second. I must leave the reader to judge whether this protracted and imperfect operation is a fair exposition of excision of the knee-joint as practised in the present day."

The second epoch includes all the operations since 1850. See Table below.

TABLE of all the Cases operated on within the Second Epoch, from July, 1850, to December, 1854, inclusive.

SURGEON.	HOSPITALS.	SEX AND AGE.	DATE OF OPERATION.	RESULT AS TO LIFE.	CONDITION OF THE LIMB. OBSERVATIONS.
Mr. Ferguson,	King's College Hospital, London,	M., 41	1850—July 20,	Death,	From operation.
Mr. Jones,	Jersey Hospital,	F., 25	Jan. 10,	Cured,	With perfect use of the limb.
Mr. Jones,	Jersey Hospital,	M., 11	1851—April 27,	Death,	From epidemic dysentery.
Mr. Jones,	Jersey Hospital,	F., 30	Sept. 4,	Cured,	With perfect use of the limb.
Mr. Jones,	Cumberland Infirmary,	M., 7	June 7,	"	"
Mr. Jones,	Jersey Hospital,	M., 14	Sept.,	"	"
Mr. Jones,	King's College Hospital, London,	M., 20	Oct. 30,	"	"
Mr. Ferguson,	Royal Infirmary, Edinburgh,	F., 21	Feb. 6,	"	"
Mr. Mackenzie,	Hummanby Hospital, Yorkshire,	M., 42	March 16,	"	"
Dr. Pritchard,	Manchester Workhouse Hospital,	M., 20	March 28,	"	"
Mr. E. Thomas,	King's College Hospital, London,	M., 12	April 2,	Death,	From pyemia, sixteen days after the operation.
Mr. Ferguson,	Jersey Hospital,	F., 28	April 17,	Cured,	With perfect use of the limb.
Mr. Jones,	Royal Infirmary, Edinburgh,	M., 9	May 6,	"	With a limb most useful in progression.
Mr. Mackenzie,	West Norfolk Hospital,	M., 28	Oct. 6,	"	Recovery.
Dr. Cotton,	Bath Hospital,	M., 94	Oct. 31,	"	With perfect use of the limb.
Mr. Gore,	Manchester Workhouse Hospital,	M., 14	Nov. 15,	Under treatment.	Twenty-four days after operation, from ex-
Mr. E. Thomas,	Royal Infirmary, Aberdeen,	M., 16	Nov. 20,	Cured,	haustion consequent upon obstinate diar-
Dr. Keith,	Royal Infirmary, Edinburgh,	M., 9	Dec., 24,	Death,	rhoea.
Mr. Mackenzie,		M., 18			
Dr. Stewart,	Delft Hospital,	M., 53	—	—	Said to be "encouraging."
Mr. Butcher,	Mercor's Hospital, Dublin,	M., 7	1854—Jan. 20,	Cured,	With perfect use of the limb.
Mr. Erichsen,	University College Hospital, London,	M., 12	Feb. 15,	"	Perfect ankylosis. Use of the limb delayed
Mr. Pemberton,	Birmingham General Hospital,	M., 12	Feb. 8,	Death,	by severe erysipelas.
Mr. Mackenzie,	Royal Infirmary, Edinburgh,	M., 12	April 15,	"	With perfect use of the limb.
Dr. Keith,	Royal Infirmary, Aberdeen,	M., 144	May 17,	Cured,	From pithitis, twelve days after the opera-
Mr. Jones,	Jersey Hospital,	F., 10	July 23,	Under treatment.	tion. Operation warranted to relieve agony.
Mr. Ferguson,	King's College Hospital, London,	M., 10	Aug. 7,	"	Recovering rapidly.
Mr. Holman,	Westminster Hospital, London,	M., 8	Aug. 28,	"	After six weeks, bones ankylosed.
Mr. Statham,	University College Hospital, London,	F., 20	Oct. 7,	Rapidly recovering.	Union between the bones complete.
Mr. Smith,	Westminster General Dispensary, London,	M., 6	Oct. 18,	"	Union between the bones for advanced.
Mr. Erichsen,	University College Hospital, London,	M., 6	Oct. 11,	"	Good ankylosis; nearly quite firm.

"The results from the annexed statistics, as summed up in this table, are most startling: 31 operations are recorded; out of this number 5 have died; but, as we dealt with the former table, the details of bygone days, even so must we deal with this, the record of modern surgery, and in the same way scrutinize closely how far these deaths are to be attributed to the special operation executed. Exception, I think, may justly be taken to Mr. Jones's third case, and the death fairly ascribed to the epidemic dysentery of the day, which at this time raged with such fatality 'that few persons labored under or died of any other disease.' Again, Mr. Fergusson's third case died from pyemia sixteen days after the operation. Every experienced surgeon is well acquainted with the fact, that after comparatively trifling operations, after the simplest amputation, pus may enter the circulation and destroy life. In illustration: very recently, in Mercer's Hospital, I amputated the forearm by double flap; a few seconds completed the task; the patient was healthy in every internal organ, and protected from any shock by the anæsthetic influence of chloroform. The case progressed most favorably, as was to have been anticipated, but this happy state lasted only some days, for soon a violent diarrhœa and shivering fit preceded the local change of a diffused inflammatory blush, an engorged and puffed condition of the wound,—tremblings and irregular shivering fits, with chattering of the teeth, contracted limbs with a morbid diminution of temperature, labored and hurried breathing, with a small, soft, rapid pulse, at once awakened alarm in my mind as to the fatal blood-poisoning; the sunken, haggard countenance, the leaden hue, the hollow eyes, the contracted features; and later, the withered flabby aspect of the cut parts, exuding a grayish fetid discharge, attended with occasional delirium; rapidly accelerated and deeply labored respirations alternating with expirations loaded with purulent fetor, confirmed the opinion; while, on the thirteenth day preceding death, constant sharp screams escaped from the sufferer, shrill, ringing, unearthly. At this time the eyes had lost all their brightness; the corneæ were opaque, lids apart; the lips and teeth covered with a fuliginous paste; the limbs from time to time agitated by subsultus; and later, a deeper, a more prolonged, struggle terminated in death. Post-mortem examination revealed what the symptoms had so clearly portrayed—pyemia, the cause of death. The death in Mr. Mackenzie's third case is not to be laid down to the particular operation; so far as the condition of the limb went, all was most satisfactory, when violent diarrhœa attacked the patient, which proved fatal on the twenty-fourth day. Mr. Mackenzie's fourth case would have died whether operated on or not; certainly the rapid death cannot be ascribed to the particular operation performed. Far be it from me to throw even the semblance of censure upon one of such admitted ability; of course, from the physical signs on examination, this accomplished surgeon was perfectly conversant with the diseased condition of the thoracic viscera, and most likely removed the joint, the cause of excruciating suffering, of intolerable agony, on the same principle that amputation is justifiably performed even in cases hopeless as to ultimate recovery. Thus, then, out of 31 operations, 25 have recovered, out of which 17 are walking about with perfect use of the limb; 6 have been operated on since August last; yet in 4 of these union between the bones is already accomplished, and the remaining 2 are rapidly recovering. One case, operated on in November, 1853, is still under treatment, from numerous complications having arisen, and 1 is said to be 'encouraging'; 1 has died from epidemic dysentery; 1 from pyemia; 1 from obstinate diarrhœa; 1 from phthisis, twelve days after the operation was performed to mitigate excessive agony; and 1 from the immediate effects of the operation."

2. Mr. Syme's remarks upon excision of the knee-joint are to be found in a clinical lecture. Mr. Syme still thinks the operation to be inexpedient, and for these reasons. "In the first place, it appears that there is much more danger connected with excision of the knee-joint than with amputation of the thigh. In the second place, the cure is far more protracted, tedious, and troublesome. Thirdly, the result is very apt to be unsatisfactory. And, lastly, the limb, in its most favorable condition, must require so much careful attention to protect it against the effects of injury and exertion, as, in my opinion, to be less useful than an artificial substitute."

III.

REPORT ON THE PROGRESS OF MIDWIFERY AND THE DISEASES OF WOMEN AND CHILDREN.

Chloroform ; its properties and safety in Childbirth. By E. W. MURPHY, A.M., M.D.,
Professor of Midwifery in University College, London, &c. (12mo., London,
Walton and Maberly, pp. 72, 1855.)

The object of this little work is not to continue a controversy on the merits or demerits of anæsthetics under these circumstances, but rather to assist the inquirer, who is anxious to give it a fair trial, but who is intimidated from want of experience. After some introductory remarks, mainly of an historical character, Dr. Murphy proceeds to explain the properties, the obstetric uses, the advantages and disadvantages, and the objections to chloroform ; and out of these materials he furnishes a pleasant and readable book, which is perfectly adapted to the end for which it is intended.

The rules which Dr. Murphy lays down for the administration of chloroform are :

"RULE 1.—Let chloroform be pure. If rubbed on the hands, the smell should be fragrant, not pungent, like sulphuric ether. If inspired from the inhaler, there is a sense of warmth in the mouth, a fruity flavor, no pungency ; if the strength of the vapor be sufficient, it will excite slight cough, but if impure, the cough is irritating.

"Let the sponge of the inhaler be placed in warm water, and then wrung dry. About thirty minims may be poured upon it, which is sufficient in the first instance.

"2.—When labor has commenced, do not interfere so long as the patient bears her pains well ; if she be not teased with short, very severe, and inefficient pains, chloroform need not be given. If, on the contrary, the severity of the first stage be such, the anguish of the patient so great, that pain is evidently a cause of protraction, chloroform may be given with great benefit.

"3.—Always commence with a small dose, about thirty minims ; if it agree with the patient, no inconvenience is caused, but she will generally complain that it is doing no good ; the quantity may then be increased until, on inhalation, the exhibitor finds that she cannot take a full inspiration without cough.

"4.—In the second stage of labor, chloroform is given when the head is approaching the perinæum, or before then, if the pains become intolerable. This may be known, not merely by their greater intensity while the uterus is in action, but also by the restlessness of the patient in the intervals. She is watchful, dispirited, still crying, but in a more subdued tone, from pain and a feeling of soreness.

"5.—When the head arrives at the perinæum, chloroform may be given in a fuller dose, if it have not already accumulated. The perinæum yields more easily under its influence, and the severity of the pain is controlled without any loss of force.

"This rule applies especially to cases in which powerful forcing pains are acting against the perinæum at the hazard of its laceration.

"6.—When operations are necessary, if they are not severe—as, for instance, some forceps operations—chloroform may be given in the same manner as in natural labor ; but always after the instrument is applied.

"If severe, it may be given as in surgical operations, but not to the same extent. Hence an assistant is necessary, who is quite conversant with the properties of this anæsthetic. It is obvious that the same person cannot operate and give, simultaneously, the full soporific dose of this agent.

"7.—The inhaler should be applied to the mouth just before the pain commences, two or three full inspirations taken, and the moment the action of the uterus ceases it should be withdrawn. The inhaler should never be applied in the interval between the pains, and if used in the middle of a pain, the cries of the patient blow away the vapor, and no relief is given.

"8.—When inhalation has been continued in this interrupted manner for some time, if any alteration be observed in the countenance or manner of the patient; if the face is flushed, or bloated, or tinged with a slight lividity; if she ramble, or become hysterical, let the inhaler be withdrawn, and the face of the patient fanned. Wait until the pains return to their original severity before renewing the inhalation, when it is probable that these symptoms will not return.

"9.—In some instances, the patient is very intolerant of her pains, and if given chloroform to relieve them, she becomes hysterical, crying, perhaps, louder than before it was inhaled. In these cases, it is better to induce sopor, which may be easily done without stertor. For this purpose, a sponge and folded handkerchief applied to the nostrils is preferable to the inhaler. Whenever sopor is brought on, the closest attention should be given to the countenance—observe the irritability of the eyelids; to the respiration—notice its frequency, and especially stertor; to the pulse—mark its strength. The handkerchief should always be held at a distance at first, and be gradually brought nearer, but the sponge should never be applied quite close to the nostrils.

"10.—There should be the freest circulation of air in the apartment; and if, after delivery, there should be any feeling of faintness or nausea, ammonia in effervescence will relieve it."

By ordinary caution and attention to these rules, Dr. Murphy thinks that chloroform may be administered with perfect safety and with great advantage in childbirth.

On the Statistics of Pregnancy. By MATTHEWS DUNCAN, M.D., Lecturer on Midwifery, &c. ("Edinburgh Medical and Surgical Journal," January, 1855.)

The object of this paper is to record observations on the three following subjects:—

1. On the position of the uterus.
2. On the position of the fœtus in utero.
3. On the position of the pregnant female.

1. With regard to the position of the uterus, Dr. Duncan points out that the uterus is developed into the abdomen in the direction of the axis of the brim of the pelvis, i. e., at about an angle of 30° to the horizon, the brim of the pelvis being inclined to the horizon at an angle of about 60° . From these circumstances he shows that the brim of the pelvis is in no sense the part supporting the uterus. The uterus is supported on every side by the parts surrounding it much in the same way as a body floating and immersed is supported. The anterior abdominal flap being beneath the centre of gravity of the organ, is the part bearing the chief weight of the uterus. These circumstances afford an explanation of the pendulous belly and of the pain produced in the sides by the dragging at the insertion of the oblique muscles of the abdomen. The long axis of the uterus is inclined to the horizon in the erect position of the female at an angle of 30° , in the supine position it is more nearly vertical, being inclined at an angle of about 60° . 2. As to the position of the child, Dr. Duncan says, that the child in utero neither stands on its head nor carries itself in any position, but floats reposing in the liquor amnii in the attitude of stablest equilibrium, viz., in an oblique direction with its head lowest. From experiments which he has made, he finds the fresh fœtus at the full time to float freely in a solution of salt of about its own specific gravity, in about the same position that is assumed in the pregnant female. Hydrocephalic children with large and heavy heads, have been supposed to illustrate, by the frequency of their malpresentation, the

theory that the gravitation of their heads is not the cause of the ordinary position of the fœtus in utero. But their heads though heavier in air, are much lighter when floating in liquor amnii from the low specific gravity of the contained fluid. Consequently their malpresentations can be equally well accounted for on the common laws of physics. Dr. Duncan shows that the statistics used by Dubois and others, to prove the uterine positions of premature fœtuses, afford no reliable conclusions. They show only the positions during abortion or miscarriage, but nothing in regard to the position in utero, before abortion or miscarriage. The statistics used by the same individuals, and their reasonings in regard to dead fœtuses, are illogical, seeing that the altered statistical circumstances of such fœtuses were not known. Their frequent malpresentations are probably the result of their altered circumstances. The uterus at the time when the child was becoming fixed in its position, was an oval cavity, with rounded glabrous walls, filled with a dense fluid, in which the fœtus floated easily, with its legs, its chief organs of locomotion, highest. In these circumstances, it is almost impossible to conceive of its assuming, much less of its maintaining, any position against the influence of gravity. 3. Dr. Duncan last of all points out the condition of the erect position in the virgin; shows how they were altered in the pregnant female, and illustrates the new conditions of the erect positions in pregnancy. The centre of gravity might be retained in its usual site above the hip-joints, by the upper part of the trunk being moved backwards to counterbalance the pregnant womb. Or the centre of gravity might be moved forwards; in which case the hip-joints were moved forwards also, by the diminution of the inclination of the brim of the pelvis, as occurs in many cases of diseases with anterior curvature of the spine.

This paper is illustrated by several diagrams.

The Pathology and Treatment of Leucorrhœa. By W. TYLER SMITH, M.D., L.R.C.P., Physician-Accoucheur to St. Mary's Hospital, &c. (8vo., London, Churchill, pp. 217; 1855.)

The outline of the principal points treated of in this work, is contained in a memoir presented to the Medico-Chirurgical Society in 1852, and printed in their "Transactions." This memoir was noticed at the time ("Abstract," XVI.), and to this abstract we must now refer our readers for any detailed account of the present work.

Dr. T. Smith is not at all disposed to believe that inflammation of the os and cervix uteri is a frequent cause of leucorrhœa. Many of the affections of the os and cervix recently stated to constitute ulceration of the surface, he believes to be only epithelial abrasions of more or less completeness. The importance and frequency of ulceration has been much exaggerated; and abrasions and superficial ulcerations, when they do occur, are more frequently secondary than primary disorders. The vaunted importance of inflammation as the great cause of uterine disorder must be altogether modified. In the author's opinion, the term "epithelial abrasion" would, in the great majority of cases, be substituted for "ulceration," and "irritation" and "relaxation" for "inflammation."

"The changes in the uterus," he says, "and the increased secretions of the uterus and vagina, found in cases of leucorrhœa, are not such as attend inflammation in other parts of the body. It is not after an attack of acknowledged metritis that leucorrhœa is most prone to occur. The discharge generally comes on in so slow a manner that its advent cannot often be referred to any particular date. No doubt in some cases—as after suppression of the catamenia from cold or imprudence, after abortion or parturition, or mechanical injury—a genuine inflammatory state lays the foundation of leucorrhœa, but the leucorrhœal discharge and the local irritation constantly remain long after the signs of positive inflammatory disease have passed away. Chronic irritation and relaxation rather than chronic inflammation, is the state which generally obtains under these circumstances. The most common and immediate cause of leucorrhœa, is simple irritation of the glands of the cervical canal, and many of the conditions described as inflammatory, such as abrasions and indurations of the os and cervix uteri, are, as I have repeatedly observed, the results of the long-continued discharge, rather than of any inflammation occurring in the os and cervix as a primary affection."

The several chapters treat respectively of the minute anatomy of the parts concerned, and of the secretions of the different forms and sequelæ of leucorrhœa—of the relations between secondary syphilis and leucorrhœa,—of the relations of vaginal or epithelial leucorrhœa to gonorrhœa in the female, to urethritis in the male, and to the ophthalmia of new-born infants,—of the relations between leucorrhœa and disordered menstruation, sterility, and abortion,—of constitutional and local causes,—and, last of all, of treatment. All these questions are gone into fully and practically, and if our space permitted we would gladly have gone over them again. As it is, we must content ourselves with our previous notice, and a slight reference to the chapter on treatment.

In this chapter we are told that undue prominence must not be given either to constitutional or local treatment. There are few cases in which a tonic treatment is not called for, and no single remedy is of equal importance to steel. Even in the leucorrhœa of the plethoric habit it is often necessary to give iron in combination with aperients and alteratives. Iron alum, particularly the iron alum with ammonia, is the preparation preferred.

Considerable value is ascribed to vaginal injections, and particularly to those containing alum and tannin.

"The injection which I have found most useful in cervical leucorrhœa," writes Dr. T. Smith, "is a solution of alum and tannin: ʒj to ʒij of tannin and ʒss of alum dissolved in a quart of water, is the strength I generally prescribe, directing one half to be used at night and the other in the morning. Mr. Morson has prepared a tannate of alumina, a chemical compound of tannic acid and alum, which is useful both as a medicine and as an injection; it requires, however, the addition of a little dilute sulphuric acid to render it soluble in water, whereas the sulphuric acid contained in common alum is sufficient to insure the solution of powdered tannin and alum in water. This renders the prescription of alum and tannin in powder the most convenient for patients, but for internal administration, Mr. Morson's salt is a very elegant preparation. I generally recommend, where the discharge is profuse, the injection of a considerable quantity of cold or tepid water before the use of the astringent solution, with a view to clear the vagina and the os and cervix uteri as much as possible from discharge, when, as already mentioned, the injection acts more efficiently. This injection, continued for two or three weeks, will scarcely fail to make an impression on the most profuse and long-continued discharge. Occasionally an astringent injection of this strength causes pain when first used; when this is the case, it should be diluted so as to avoid pain, and be gradually increased in strength.

"Solutions of sulphate of iron and sulphate of zinc, iodine, the diacetate of lead, and a variety of other medicinal substances, are recommended as astringent injections in leucorrhœa; but they are none of them equal to the tannic acid and alum. Sometimes, however, when the more powerful astringents fail, after a time, of their effect, it is very useful, as Dr. Ashwell has pointed out, to alternate from one injection to another. In leucorrhœa attended by pain, the lead injection, combined with opium, is especially useful. The decoction of oak bark and alum was long the standard injection; but the oak bark and tormentilla, which is also sometimes used, are only efficacious from the quantity of tannin they contain; and it is better to use the tannin itself in solution than these decoctions. Injections of cold water simply, in considerable quantity, are often of great value in giving strength to the vaginal walls and the lower segment of the uterus, and in this way contributing to restrain excessive secretion. A solution of the nitrate of silver, injected in small quantities, has been a favorite remedy since the time of Dr. Jewell, and it is undoubtedly a powerful astringent; but as there is no sufficient object, in cervical leucorrhœa, in applying it to the vaginal walls, I consider, when this substance is used, it should be applied in solution, or the solid form directly to the surface intended to receive it. Dr. Fleetwood Churchill states that he has repeatedly seen menorrhagia produced by injections of the nitrate of silver. Whenever a solution of the nitrate of silver is used, it should be applied through the speculum. When it is used by patients themselves with a sponge and a glass tube, it is, I suspect, more often applied to some part of the vaginal surface than to the os and cervix uteri.

"As regards the mode of using vaginal injections, the old-fashioned tubular

glass and metallic syringes ought to be discarded altogether, except in cases when a powerful remedy is employed, and the effect is intended to be limited to the vagina. As far as the uterus is concerned, injections are well-nigh useless, unless a copious and continued stream is directed against the os and cervix. Any enema syringe, to which a vaginal tube has been adapted, will serve very well for ordinary vaginal injections. The very ingenious syringe invented by Dr. Evory Kennedy, if made of vulcanized india-rubber, is an excellent instrument for the purpose. By his syringe any quantity of fluid may be used. In some respects, however, the cylindrical pump syringe, made of india-rubber, and acting upon the same principle, is still more convenient than Dr. Kennedy's instrument. Any quantity of fluid may be thrown up, and as less force is required to empty it at each contraction, it is not so fatiguing as the globular syringe. Another method of injection is the syphon douche, largely used in this country by Dr. W. Jones. This plan has long been used in Holland, where leucorrhœa is very prevalent, by the Dutch physicians; but its use was revived by the late Professor Kiwisch, who employed it extensively in the treatment of uterine disease, as well as in the induction of premature labor. No muscular effort is required in the use of the douche, but it is more cumbersome and formal than the other methods. A modification of the douche has recently been devised by M. Gariel, in which, after the introduction of the vaginal tube, a circular air-cushion is placed round the tube, just within the ostium vagina, and inflated with air, so as to prevent the free return of the injection. The fluid is let off by a small tap, and by this modification the vagina is kept full of fluid during the use of the injection. I have no doubt this modification is calculated to prove of much service in cases of menorrhagia, or in the floodings of cancer uteri, as a means of keeping astringent solutions or iced water in continuous contact with the lower part of the uterus. In the employment of any of these means of profusely injecting the vagina, great care should be taken when pregnancy exists, as any of them, and particularly the syphon douche, may bring on abortion. Several cases in which this accident has occurred have come to my knowledge. In common cases of cervical leucorrhœa, when the disorder consists chiefly in the excessive secretion of the mucous glands of the cervical canal, without any great loss of surface or alteration of structure, injections will almost always, combined with attention to the general health, restrain the discharge; and probably if vaginal injections of cold or tepid water, or some simple astringent solution,—which is nothing more than internal bathing,—were resorted to on the first appearance of vaginal discharge, confirmed cases of leucorrhœa would be much less frequent than they now are."

Nor is Dr. T. Smith disposed to discard pessaries.

"The tendency has of late years been to discard pessaries altogether. It has been taken for granted that inflammation is the great source of uterine disorder, and it has in consequence been held absurd to subject patients suffering from leucorrhœa, to the mechanical irritation which pessaries necessarily induce to a greater or less extent. This appears plausible, and no doubt it applies with force to cases of great uterine irritation, and to pessaries which are objectionable on account of their form or material. But I believe that in practice, notwithstanding, pessaries are highly useful in many cases, and that we possess no means by which we can compensate for their use, in cases which require them. It is certain that in cases of procidentia uteri, when the os and cervix are exposed to the irritation of the external air, cervical leucorrhœa with abrasion of the os uteri are almost invariably present. The same things occur in simple prolapsus, from the irritation of the os uteri by the secretions of the lower part of the vagina. Some of the most troublesome instances of leucorrhœa met with in practice are of this latter kind. The best thing which can be done in such cases is to permanently lift the os and cervix uteri into the natural position, and to defend the lower part of the uterus as much as possible from the utero-vaginal discharges. I have found that when no other means will arrest the leucorrhœal discharge accompanying prolapsus, it often ceases after wearing a soft, well-adapted sponge pessary. In epithelial discharge from the vagina, also, when the surfaces are denuded of epithelium, soft pessaries are frequently useful, however much they may seem to be contraindicated in theory. Any irritation they may occasion is more than compensated for by their keeping the opposite surfaces of the vagina

from coming into contact with each other. The vaginal secretions are so acrid in some of these cases, that even the finger smarts after making an examination."

Again:

"The pessary which I find most useful in the treatment of leucorrhœa combined with prolapsus, is the simple sponge pessary, consisting of a round or oval piece of sponge, to which a tape or ribbon is attached. This is easy of introduction; it supports the os and cervix without causing any great degree of irritation; it absorbs the discharges; and it defends the walls of the vagina and the os and cervix uteri from coming into contact with each other. If the sponge could be deprived of its tendency to smell, it would, in my opinion, be invaluable in the treatment of disease of the os and cervix attended by prolapsus. The principle of keeping the abraded or ulcerated os and cervix uteri free from the irritation of the vaginal discharges, is almost as important as the defence of external ulcers from the external air. By the sponge dressing, the worst cases of ulceration of the os and cervix uteri may sometimes be cured more readily than by the application of caustics. It acts in part in the same way as the charpie dressings of the French, and the dressings of uterine ulcerations and abrasions by lint, as practised with great success by the late Professor Kiwisch, while it has the great advantage that it can be introduced and withdrawn by the patient herself. The sponge pessary should be made of a small soft sponge in preference to a piece cut from a large sponge. It may be worn all day, or during the hours of walking and exercise, and at night it should be placed in cold water. Many women suffering from the different forms of leucorrhœa and disorder of the os and cervix, particularly when combined with weakness of the vaginal walls and prolapsus, can walk with comfort while wearing the sponge, who are unable to move without pain when the uterus is unsupported. Sometimes in cases when excessive irritation has been caused by a solution of the nitrate of silver and other astringents, I have had bad cases of abrasion of the os uteri accompanied by purulent discharge, dressed daily with lint, or with lint and some simple unguent, with the best effects.

"Some practitioners recommend the use of sponge pessaries, dipped in the decoction of tormentilla, or a solution of alum or tannin, but I think the clean sponge, wrung out of cold or tepid water, or smeared with oil, much more useful, as, if an astringent be used, it combines chemically with the animal matter of the sponge, and renders it so hard and inelastic as to irritate the vagina and os uteri almost as much as a wooden pessary."

Dr. T. Smith is not in favor of the use of the stronger caustics.

"In my opinion," he says, "there is no good which can be effected by the more powerful caustics, which cannot be accomplished by the nitrate of silver, or by other means. It is true that, by the prolonged application of the nitrate of silver, loss of substance may be caused, but this is far less likely to occur with lunar caustic than with the more powerful escharotics. It is also true that some practitioners apply the more violent caustics so lightly that they do not exceed the milder medical action of the solid nitrate of silver, but in such cases it would be quite as well to use the safer remedy where a caustic is required."

Dr. T. Smith, also, shows that the topical applications which are useful in cervical leucorrhœa cannot always be used in vaginal leucorrhœa.

"Almost all the astringent substances used for injections in cervical leucorrhœa have an acid reaction, and when the vaginal discharge is not purulent and alkaline, but is, on the contrary, very distinctly acid, injections of acid astringent solutions are irritating and injurious. In simple epithelial leucorrhœa of the vagina, when the lining membrane is intensely red, and the epithelium is thrown off in large quantities, either mixed up in plasma, or in the form of shreds and flakes, much benefit is derived from the use of weak alkaline injections, composed of the bicarbonate of soda or potash in barley water, linseed tea, or poppy infusion. If an astringent be used, I have found the solution of the diacetate of lead to be the best."

Dr. T. Smith also enters fully into the other questions connected with treatment, and there is no point from which much valuable information is not to be gained; but for these, as well as for other points, we must refer our readers to the book itself, and this we do with the conviction that the time will be well spent, which is given to its careful perusal.

IV.

REPORT ON MATERIA MEDICA AND THERAPEUTICS.

An Essay on the action of Medicines in the System. By FREDERICK W. HEADLAND, M.B., B.A., F.L.S. Second Edition, enlarged and revised. (8vo., Churchill, 1855, pp. 394.)

This work, of which the present is the second edition, is the Prize Essay to which the Medical Society of London awarded the Fothergillian Gold Medal, for 1852. It discusses the mode in which therapeutic agents, introduced into the stomach, produce their peculiar effects upon the animal economy; and this it does in a series of propositions, which will be best stated in the author's own words:

"In the *first proposition* it is affirmed that a medicine must (as a general rule) obtain entry into the fluids of the body—pass, that is, from the intestinal canal into the system at large—before its action can begin. There are four proofs of this. It is shown that when introduced at another part of the body a medicine acts in the same way as when placed in the stomach. It is found by direct experiment that a poison will not act through the medium of nerves only, but that its passage in the blood is required. Thirdly, the course of the circulation is quick enough for the most rapid poison or medicine to pass quite round the body from the veins of the stomach before it begins to operate. The last and most conclusive argument to show that medicines pass out of the stomach into the system, is that they have actually been detected by chemists, not only in the blood, but in the secretions formed from the blood. Remedies, then, pass from the stomach into the blood and fluids. How do they do so?

"In the *second proposition* it is laid down that all those which are soluble in water, or in the secretions of the stomach or intestines, pass through the coats of these organs into the interior of the capillary veins which surround them. It has already been shown that most medicines pass through in some way; we shall now have to learn how they pass, and what special arrangements are made for the passage of substances differing in nature. By the physical process of absorption, a liquid may pass through the animal membranes, from the interior of the stomach or intestine, to the interior of the small vein which lies close outside it. In examining the laws by which this process is conducted, we shall find that all the requirements are present in these parts, provided only that the substance to be absorbed shall be first in some way dissolved, and reduced to the liquid state. In the stomach there is, in contact with the substance just introduced, a thin watery secretion, containing acid, and a matter called pepsin: this is the gastric juice. A large number of medicines are soluble in water. They are dissolved in this fluid. Some others are soluble in dilute acid. These too are dissolved here. Albumen, and matters like it, are reduced to solution by the aid of the pepsin, which is the principle of digestion. But there are some few mineral bodies, and many vegetable substances, as fats and resins, which cannot be thus dissolved by the juice of the stomach. They are soluble, more or less, in a weak alkaline fluid; and such a fluid is the bile, which is poured out into the first portion of the intestine. They too are reduced to solution and absorbed. In this manner it is shown that a very great majority of remedial agents are capable of being reduced to solution, of being absorbed without material change, and of passing thus into the circulation.* Very few are quite in-

* There is no doubt that the small veins which ramify outside the coats of the stomach and intestines are capable of taking up any matters in a state of proper solution, even fats when dissolved in alkali. But are medicines ever taken up by the lacteal absorbents? Probably seldom or never; for it seems that these vessels are only engaged after a full meal, and subsequent to the regular formation of chyle. They do not exist in the coat of the stomach but commence in the small intestine at some distance from the pylorus.

soluble; but some that are dissolved with difficulty may be left partly undissolved in the intestinal canal. What becomes of these?

"It is asserted in the *third proposition* that substances which are thus insoluble cannot pass into the circulation. Arguing from a physical law, we should say at once that it was impossible; but the matter cannot be so lightly dismissed, for a foreign professor has lately asserted that insoluble matters may and do pass into the circulation. I have made experiments to satisfy myself on the point, and have come to the contrary conclusion.

"In the *fourth proposition* it is stated that some few substances may act locally, by irritation or otherwise, on the mucous surface of the stomach or intestines. These are not many; they act without being absorbed; and they do not extend into the system at large. In some few cases, these local actions may be succeeded by changes in distant parts, on the principle of *revulsion*.

"Having just shown how medicinal substances are absorbed, we have now to suppose that they are in the blood.

"It is next maintained, in the *fifth proposition*, that the medicine, being in the blood, must permeate the mass of the circulation as far as to reach the part on which it tends to act. This it can easily do. The circulating blood will conduct it anywhere, in a very short time. Supposing a medicine has to act on the liver, or on the brain, or on the kidney, it does not influence these organs at a distance, but it passes directly to them in the blood, and then its operation is manifested. This may be called the rule of *local access*. Its proof depends on two things: on the improbability of the medicinal influence being able to reach the part in any other way, as shown in the first proposition; and on the fact of medicinal agents having been actually detected, in many cases, in the very organs over which they exert a special influence. But are there any exceptions to this? Can a medicine ever produce an effect without actually reaching the part? It seems that there may be two exceptions. In some cases, an impression of *pain* may be transmitted along a nerve from one part to another; and in some other few instances, a muscle, when caused to contract by the influence of a medicine, may cause other muscles near it to contract by sympathy.

"Before we inquire into the remedial action of the medicine in the blood, we must consider whether that fluid may not first alter it in some way, so as to hinder or affect its operation. To a certain extent this is possible.

"In the *sixth proposition* it is asserted that while in the blood the medicine may undergo change, which change may or may not affect its influence. It will have to be shown that this change may be one of *combination*, as of an acid with an alkali; of *reconstruction*, when the elements of a body are arranged in a different way, without a material change in its medical properties, as when benzoic is changed into hippuric acid; or of *decomposition*, when a substance is altogether altered or destroyed, as when the vegetable acids are oxidized into carbonic acid.

"Having considered these preliminary matters, we shall arrive at the main point. The medicines are now in the blood. We must consider what becomes of them; what they do next; where they go next; and how they operate in the cure of diseases. I have made a classification in which medicines are divided according to my views of their mode of operation. The classes and their subdivisions will serve for references in illustration of what I have to say. For it is not possible to speak of the general operation of medicines without adducing particular instances; nor will time and space always allow me, in doing so, to refer to individual medicines.

"There are four great groups of medicines, the action of each of which is well marked and distinct. The first class acts on the blood; and as a large number of diseases depend on a fault in that fluid, we may by their means be enabled to remedy that fault. They are the most important of all medicines. They are called *Hæmatics*, or blood-medicines. They are used chiefly in chronic and constitutional disorders. But a second class of remedies are temporary in their action. They influence the nervous system, exciting it, depressing it, or otherwise altering its tone. They are chiefly useful in the temporary emergencies of acute disorders. They can seldom effect a permanent cure, unless when the contingency in which they are administered is also of a temporary nature. They

are called Neurotics, or nerve-medicines. A third set of medicines, less extensive and less important than the others, acts upon muscular fibre, which is caused by them to contract. Involuntary muscular fibre exists in the coats of small bloodvessels, and in the ducts of glands. Thus Astringents, as these agents are called, are able, by contracting muscular fibre, and thus diminishing the calibre of these canals, to arrest hemorrhage in one case (when a small vessel is ruptured), and to prevent the outpouring of a secretion in another case.

"The fourth class is of considerable importance. Some medicines have the power of increasing the secretions which are formed from the blood by various glands at different parts of the body. By their aid we may be enabled to eliminate from the blood a morbid material through the glands; or we may do great good by restoring a secretion when unnaturally suppressed. They are called Eliminatives. Like Hæmatics, their influence is more or less permanent. That of Neurotics and Astringents, particularly the former, is transient.

"The general mode of action of these four classes of therapeutic agents is laid down in the four remaining propositions, about as far as it seems to me to be capable of a positive definition. Each proposition concerns one of these classes of medicines. All I can now do is to recapitulate the chief affirmations made; as to give any idea of their proof would require me to enter into a number of details which had better be postponed to the third chapter.

"In the *seventh proposition* it is stated of Hæmatic medicines that they act while in the blood, over which fluid they exert an influence; and that their effect, whatever it be, is of a more or less permanent character. A line of distinction is drawn between two divisions of this class of blood-medicines. Some of them are natural to the blood; they resemble or coincide with certain substances that exist in that fluid; so that, having entered it, they may remain there, and are not necessarily excreted again. These are useful when the blood is wanting in one or more of its natural constituents. This want causes a disease, and may be supplied by the medicine, which in this way tends to cure the disease. Medicines of this division are called Restoratives; for they *restore* what is wanting.

"Some other blood medicines, although they enter the blood, are not natural constituents of the vital fluid, and cannot remain there, for they are noxious and foreign to it. They must, sooner or later, be excreted from it by the glands. They are of use when disease depends on the presence and working in the blood of some morbid material or agency, which material or action they tend to counteract or destroy. They may be called *vital antidotes*; not strictly *specifics*, for they are not always efficacious, on account of variations in the animal poisons, or from the casual operation of disturbing causes. They are applicable in those many disorders which depend, not on the absence of a natural substance, but on the presence of an unnatural agent in the blood. These medicines are called Catalytics, from a Greek word which signifies *to break up* or *to destroy*. Having performed this their function, they then pass out of the blood.

"All this requires to be proved.

"In the *eighth proposition* it is stated of Neurotics, or nerve-medicines, that they act by passing out of the blood to the nerves, which they influence. This is only to insist on the rule of *local access*, already laid down in prop. 5. It is further affirmed that they are transitory in action. They appear to effect molecular changes in nerve-fibre, similar to those by which the phenomena of the senses are produced, and which are by nature transitory in their results. And yet they may be very powerful, even so as to extinguish vital force. Thus, short and unenduring as is the operation of these agents, it may last long enough to cause death, and so a temporary influence produce a permanent result. There are three divisions of Neurotics. The first set are of use when there is a dangerous deficiency of vital action. These are stimulants. They exalt nervous force, either of the whole nervous system, or only of a part of it. They vary very much in power. A second set, called Narcotics, first exalt nervous force, and then depress it. They have thus a double action; but they have also a peculiar influence over the functions of the brain, which is different from any possessed by other nerve-medicines. They control the intellectual part of the brain, as distinguished from its organic function; the powers of *mind* more than those of *life*. Some narcotics tend to produce inebriation: others, sleep; others, again,

delirium. In the third place, some neurotics tend simply and primarily to depress nervous force. They may act on the whole nervous system, or on a part of it only. They are often very powerful; and they are of use when, from any cause, some part of the nervous system is over-excited. They are called Sedatives. Like other neurotics, they are used in medicine as temporary agents in temporary emergencies. If a permanent action be required, the remedy must be constantly administered, so that the effect may be kept up by continual repetition.

"In the *ninth proposition* it is affirmed of astringent medicines that they act by passing out of the blood to muscular fibre, which by their contact, they excite to contraction. They do not so much influence the voluntary fibre of the muscles, which is under the direct control of the nervous system; but they chiefly manifest their action on the involuntary or unstriated muscular fibre, which is not directly controlled by the brain and nerve centres, and for this reason more under the operation of external or irritating agents. Meeting this in the coats of the capillary vessels and of the ducts of glands, they are enabled to act as styptics, and as checkers of secretion. The action of astringents appears to depend on a chemical cause; for we find that all of them possess the power of coagulating albumen.

"The *tenth proposition* treats of Eliminatives. It is not said simply that these increase the secretions of a gland; or that they stimulate the glands while passing by them in the blood. But it is laid down as a rule that they act by themselves passing out of the blood through the glands, and that while so doing they excite them to the performance of their natural function. They are substances which are unnatural to the blood, and must therefore pass out of it. In so doing they tend to pass by some glands rather than by the others: in these secretions they may be detected chemically; and it is on these glands that they have an especial influence. Their uses in treatment are various and manifold."

After discussing these several propositions, the author concludes by treating of some of the more important medicines separately.

In reading through the volume, there are many places which we had marked for reference, but we have thought it better to give the preceding sketch of the objects and arguments of the book, and leave our readers to form their own impressions. As to our own impressions, suffice it to say, that they have been of a mixed character, in which feelings of satisfaction have undoubtedly predominated. We cannot go with the author in some directions, but we are willingly led by him in others. We have gained from him much light and information respecting several intricate questions, and among them we would particularize two—the action of quinine and that of saline purgatives.

Arguing upon the strong resemblance which M. Liebig has shown to exist between the *taurine* of the bile and quinine, Dr. Headland suggests that quinine (and other simple bitters) may act beneficially by taking the place of *taurine*, and he supports this view by pointing out that the biliary secretion is deficient or deranged in the cases in which quinine is unequivocally beneficial.

"It is ascertained that many, if not all, of the diseases in which quina and its kindred medicines are found to be of use, are connected with a derangement of the secretory functions of the liver. One of these diseases is the debility which is consequent upon typhoid and other fevers. In these fevers the function of the liver is always more or less interfered with, though more obviously in some cases than in others. In strumous habits, in which generally bark is of signal service, and was very strongly recommended by Cullen, Fordyce, and others,—there is very commonly a peculiar degeneration of the liver, which has been ably described by Dr. G. Budd. This state is distinct from the fatty enlargement common in phthisis, in the early stage of which disease quinine is also very serviceable.

"Quinine is often beneficial in gout, in which the liver is always more or less deranged.

"Turning to periodic diseases, we find that impaired hepatic functions are the rule, and the absence of such disorder the exception. This will be at once admitted in the case of dysentery, and of the remittent and yellow fevers of the tropics. It is also true of ague. It seems even likely that the enlarged

spleen may be partly caused by an obstruction to the circulation in the liver. This affection of the spleen is not uncommon in other liver diseases.

"In typhus fever both the spleen is disorganized and the liver deranged. It is observed in tropical countries that severe forms of remittent not unfrequently pass into continued fever, which seems to point to some analogy between the two. Ague even may pass into typhoid fever. And I have already referred to the fact that quina has of late been strongly recommended in the treatment of continued fevers in general.

"Dr. Watson states that in New Zealand the biliary functions suffer so much in the intermittent which occurs there, that it is known among the inhabitants by the name of the 'Gall-fever.' ('Lectures on the Practice of Medicine,' vol. i. p. 793.)

"Asiatic cholera is considered by many physicians to be a kind of terrible intermittent which seldom lasts beyond the second or cold stage. The secretion of bile is completely arrested during the continuance of the rice-water purging. Quina has been tried in cholera, and the beneficial results have been sufficiently marked to encourage us to give it a more extensive trial in the event of another visitation.

"Let us now place in conjunction with these facts, the similarity which has been pointed out between the bitter vegetable principles, and one of the chief constituents of the reabsorbed bile. Quina and others resemble in many points a certain principle in the bile; they tend to cure certain diseases; and these diseases depend on deranged hepatic functions. Does not this suggest the possibility that they may be of service by actually forming the above principle, or by supplying its place in the blood? It is possible that such bodies as quina and cinchonina may be able to fulfil the functions of bile in the blood by remaining as they are, without even changing at all.

"It is just possible that the presence in the blood of the bile-product, the supply of which has been cut off by the hepatic disease, might have prevented the continual action of the ague-poison.

"There is another fact which gives additional probability to such an idea. Another remedy of a different kind has been used in all the diseases in which quina is admissible, proving in some cases superior, and in other instances second only to it in its beneficial action. This is mercury; used in remittent and yellow fevers; of the first importance in dysentery; employed by Dr. Baillie in ague, and pronounced by him to be in some cases superior even to quina. In small doses it is frequently of use in cases of debility and scrofula. And mercury is a cholagogue; i. e., an agent which is known to have the effect of promoting the secretory function of the liver. Thus we may conceive that mercury, not given in excess, or to salivation, may operate in a different way to produce the same end as quina. One explanation will suffice for both.

"If this connection between tonics and the bile were actually established, then we should be enabled to explain a matter which would otherwise seem difficult to understand;—how it is that small doses of mercury may sometimes act as tonics, though we know that the ultimate action of this medicine, like that of other catalytics, is to deteriorate the blood. Even in scrofulous and enfeebled cases, small doses of blue pill or of calomel are often signally useful; and not prejudicial, as is sometimes stated by those who confound their application with that of mercury given in salivating doses. Under such a course, when judiciously enforced, we may see the dilated pupil contract to its normal size, and the pale enervated countenance become rosy and lively, and feel the weak compressible pulse to become hard and firm. Perhaps mercury in such a case may be indirectly tonic, by restoring to the blood the natural tonic principle of the bile."

The remarks upon the action of saline purgatives are very important, and they have the special merit of being founded upon some cleverly contrived original experiments. They altogether explode the idea that purgation from this cause is a simple question of exosmosis of the serous parts of the blood through the intestinal walls to a fluid of greater density contained within the intestines. The experiments, indeed, seem to be quite conclusive as to the primary absorption and subsequent excretion of the purgative dose.

"If it be true," writes Dr. Headland, "that sulphate of magnesia, when given as a purgative, is first absorbed and afterwards again excreted into the cavity of the bowel,—then, if we could examine the alimentary canal which had received the salt, we should find, at a certain period after the reception of the latter, that it had more or less completely disappeared by the process of absorption; and, at a certain later period, we should discover the same salt abundantly present in the cavity of the bowel, because now undergoing excretion from the blood. It is obviously impossible to make these observations on the same animal. The next best thing is to make use of animals in the same condition, and, as nearly as can be judged, of similar vital powers.

"I therefore chose three dogs, all in a state of health, and of the same size and condition. I administered to each of them, at the same time, a solution consisting of three drachms of sulphate of magnesia dissolved in three ounces of water (having the specific gravity 1.066). It had previously been ascertained that this dose produced purging in another dog in about three hours. The times for killing each of the three dogs were chosen accordingly. They were not allowed to live long enough for the production of purging; neither was anything lost by vomiting, or by want of care in the administration of the solution, which was done through a syringe.

"1. The first dog was killed after three-quarters of an hour. The intestines were comparatively empty. From the stomach, bowels, and their contents, the soluble matters were extracted by repeated washing, and long maceration in water. These washings were filtered through a cloth, and then evaporated to dryness. The residue was again treated with water, and a clear solution then obtained by filtration. It was now precipitated by phosphate of soda and solution of ammonia, the precipitate washed with solution of muriate of ammonia, the ammonio-phosphate of magnesia dried, and ignited for some time in a platinum capsule. What remained was phosphate of magnesia. It was weighed, and the magnesia calculated from it. Another simple calculation gave the amount of the crystalline sulphate to which this corresponded. The result showed that only 55.928 grains of the salt remained in the intestinal canal out of the 180 grains administered.

"2. The second dog was killed after one hour and a half. The stomach and intestines were at once removed, and the latter found rather full. They were subjected to the same chemical analysis. The result was that 77.354 grains of sulphate of magnesia were found in the intestinal canal.

"3. The third dog was killed after two hours and a half. The bowels were found much distended. (This was shortly before the time at which purging had commenced in another animal.) The same process being followed, a quantity of magnesia indicating 96.985 grains of the crystallized sulphate was discovered in the stomach and bowels.

"From these experiments several things appear. The longer the time allowed after the administration of the dose, the larger the amount of salt discovered in the bowel. The shortest time left was three-quarters of an hour. About 55 grains was then all that was left of the 180 grains given, the rest of which must have been absorbed, as none could have been lost in any other way. Three-quarters of an hour further being allowed to the second dog, about 22 grains more are found in his intestines, which are more filled with fæces. From which I am led to suppose, that the minimum of the salt to be found, or the maximum of absorption, in these animals, must have been between these two periods, or after about one hour. For at three-quarters of an hour it is undergoing rapid absorption, and at one hour and a half it is being again excreted into the intestine. Again, after another hour, the contents of the intestines are increased, and the amount of the salt has risen to 96.98 grains. Purging would soon follow, and the excretory process, having already expelled from the circulation more than half of the sulphate which had entered it, would go on until the whole had been cast out in the same way."

We have said that we cannot go with Dr. Headland to some of his conclusions. We cannot, for instance, accept all he has to say about tannin v. gallic acid, at p. 288; for if gallic acid is a more efficacious internal remedy than tannin, we cannot see why it must be converted into a kind of quasi-tannin in

order to be more efficacious. Nor can we agree to the therapeutical position assigned to alcohol, and to some other remedies. Unquestionably, however, we agree with him much more than we disagree, and we shut the book with the firm conviction that Dr. Headland has done good service to the cause of true therapeutics.

The Essentials of Materia Medica, Therapeutics, and the Pharmacopœias. For the use of students and practitioners. By ALFRED BARING GARROD, M.D. Professor of Materia Medica in University College, London, &c. (12mo., Walton and Maberly, 1855, pp. 282.)

This work is intended to serve the student as a text-book from which all unnecessary details are omitted, but which shall still be a sufficient guide to him both in his student career and afterwards. Accustomed to more bulky works, we at first wondered how one so little could be made to contain all the "essentials" of so comprehensive a subject: but, on beginning to read, we soon found that Dr. Garrod has really contrived to justify his title, and to produce a work which will be of great value to the student in preparing for his examinations, and to the practitioner who wants to refresh his memory in a hurry—a work which is all the more valuable on account of its modest dimensions. Whether these "essentials" are sufficient to *teach* the subject is another question; but our own impression is that more words are necessary to catch the inattentive ear and wandering attention of the young student. Be this as it may, however, it is certain that Dr. Garrod has produced a very valuable *multum in parvo*, and we all owe him many thanks for coming forward to rescue us from the wilderness of dead matter in which the "essentials" of materia medica are generally hidden.

Dr. Garrod adopts the natural-history arrangement, beginning with the non-metallic elements and compounds; and the subjoined specimens, taken at random, must serve to convey an idea of the manner in which he carries out his plan.

"*SARSA (JAMAICENSIS), Lond.* The root of *Smilax officinalis*. *Sarsaparilla*; Lin. Syst., *Dicæia Hexandria*; grows in South America.

"*Description.* *Sarsaparilla* consists of the rhizome or root-stock, called also the chump, with numerous roots attached, generally several feet long, but of different lengths and thickness in different varieties; these roots often give off secondary rootlets, which are themselves again finely subdivided; they are then said to be bearded. On a transverse section of the roots they are seen to consist of a cortex or rind, and a ligneous cord, or medullium enclosing the pith. According to the different characters of these layers they have been classified by Dr. Pereira into the *mealy* and *non-mealy sarsaparillas*.

"The *mealy* varieties are distinguished by the large amount of starch contained in the inner cortical layers, which is sometimes equal in thickness to the medullium; they break with a starchy fracture; the cortex is often cracked transversely, and sometimes falls off; they have sometimes a swollen appearance, and hence are named *gouty*. If a drop of sulphuric acid be added to a transverse section, the mealy coat is unchanged, the ligneous zone becomes of a dark purple, and when a solution of iodine is applied the starchy layer becomes evident, from the formation of the blue iodide of amylin.

"The mealy varieties include the *Honduras*, the *Brazilian*, and the *Caraccas*, or *gouty Vera Cruz*.

"The *Honduras* occurs in bundles, about three feet long, composed of the folded roots, secured by a few circular twists; of a dirty brown color, with many lateral fibres, but no chump; it is very mealy. It is brought from the Bay of Honduras. The botanical origin is doubtful.

"The *Brazilian* or *Lisbon* occurs in bundles, from three to five feet long, composed of the unfolded roots, bound together very tightly by a flexible stem; of a reddish-brown color, with few rootlets. It comes from the Brazil, through Lisbon. It is probably derived from *Smilax papyracea* and *Smilax officinalis*.

"*Caraccas*, or *gouty Vera Cruz*. In bundles, two and a half feet long, and one foot broad, of a pale yellow color. The chump is present, and it is very mealy. Derived from *Smilax officinalis* and *syphilitica*.

"In the *non-mealy* varieties the cortex is deeply colored and not mealy. Although some starch granules can be detected under the microscope, still the number is comparatively few. The diameter of the medullium is generally four or five times greater than that of the cortex. Oil of vitriol applied to a transverse section causes both cortex and wood to become of a dark red tint, and iodine shows but a small amount of starch. Under this division are included the *Jamaica*, the *Lima*, and the *true or lean Vera Cruz*.

"The *Jamaica* occurs in bundles, from a foot to a foot and a half in length, with spirally twisted roots, folded, and numerous rootlets (*bearded*), of a red color. It is derived from *Smilax officinalis*: it comes by way of *Jamaica*. This is the only officinal variety; it is stated in the *Pharmacopœia* to be of a reddish color, not mealy, and with numerous rootlets. It yields much extractive matter.

"*Lima* Sarsaparilla occurs in bundles, about two or three feet long, folded, with the chump in the interior, of grayish-brown color; it is derived from *Smilax officinalis*.

"The *true Vera Cruz* is not often found in commerce; it is lean, unfolded, with few rootlets; the chump is present.

"*Prop. & Comp.* Sarsaparilla contains a volatile oil, starch, ligneous fibre, and a peculiar principle occurring as a white powder, *Smilacin*, of which little is known; soluble in hot water and alcohol, but almost insoluble in cold water; it colors sulphuric acid red.

"*Off. Prep.* DECOCTUM SARSÆ, LOND. Decoction of Sarsaparilla. (Sarsaparilla, ℥v; distilled water, Oiv. Boil down to two pints, and strain.)

"DECOCTUM SARSÆ COMPOSITUM, LOND. Compound Decoction of Sarsaparilla. (Boiling decoction of sarsaparilla, Oiv; sassafras sliced, guaiacum wood rasped, fresh liquorice bruised, each, 3x; mezereon, ℥ij. Boil for fifteen minutes, and strain.)

"EXTRACTUM SARSÆ LIQUIDUM, LOND. Liquid Extract of Sarsaparilla. (Sarsaparilla, ℔iiss; distilled water, five gallons; rectified spirits, f.℥ij. Boil the sarsaparilla in three gallons of water to twelve pints, pour off the liquor, and strain while hot. Boil the sarsaparilla again in the remaining water down to half, and strain. Evaporate the mixed liquors to eighteen fluid ounces, and when the extract has cooled, add the spirit.)

"SYRUPUS SARSÆ, LOND. Syrup of Sarsaparilla. (Sarsaparilla, ℔iiss; distilled water, three gallons; sugar, ℥viij; rectified spirit, f.℥ij. Boil the sarsaparilla in two gallons of water down to a gallon, pour off the liquor, and strain while hot. Again boil the sarsaparilla in the remaining water down to half, and strain. Mix the liquors and evaporate to two pints, and in these dissolve the sugar. When they have cooled, add the spirit.)

"*Therapeutics.* Very little that is definite can be stated with regard to the action of sarsaparilla upon the animal economy; it is supposed to be diaphoretic, diuretic, tonic, and alterative. It is extensively employed in the treatment of secondary syphilis, but as it has been generally administered in combination with powerful remedies, it is difficult to ascertain how much influence this drug has had in the cure of the affection. By some practitioners sarsaparilla is regarded as a remedy of great value; by others as possessing but little power: as a rule, it is more relied on by surgeons than physicians. Sarsaparilla has also been given in cachectic conditions of the habit depending upon other causes, as in scrofula, &c.; and in the form of the compound decoction, in which other stimulant sudorific agents are present, in the chronic forms of rheumatism, gout, and skin diseases.

"*Dose.* Of either decoction, f.℥iiss to f.℥iv; of the liquid extract, f.℥j to f.℥ij; of the syrup, f.℥ss, upwards, usually an adjunct to the other preparations of sarsaparilla.

"*Adulteration.* Inferior kinds of sarsaparilla are substituted for the officina. *Jamaica* variety; these yield much less extractive matter; sometimes other substances are mixed with it, as *dulcamara*, &c., detected by the difference of structure."

* * * * *

"POTASSÆ NITRAS, Lond. Nitrate of Potash; Nitre.

"*Prep.* Certain soils in India contain nitrates of lime and potash; these, by being treated with wood ashes (carbonate of potash), yield nitrate of potash and carbonate of lime; the former is dissolved out and crystallized.

"*Prop. & Comp.* Six-sided prisms, transparent, striated, with a peculiarly cooling taste, soluble in water, not precipitated by chloride of barium or nitrate of silver; fuses, but does not lose weight unless the heat is intense, when it gives off oxygen, and is converted into nitrate of potash, which last yields nitrous vapors when treated with sulphuric acid; deflagrates with heated charcoal, and forms carbonate of potash; when treated with sulphuric acid, it yields 85 per cent. of sulphate of potash. Nitric acid can be shown to be present by dissolving the salt in a little water, adding an equal bulk of sulphuric acid, and, when the mixture has cooled, a few drops of a solution of protosulphate of iron, a dark olive color is produced, which is very characteristic.

"*Therapeutics.* Nitre is refrigerant and diuretic; it also produces some alteration in the condition of the blood, and a powerful sedative action upon the heart and vascular system. It is used in small doses as a refrigerant and diuretic in febrile affections, to allay irritation of the mucous membrane of the stomach in inflammatory forms of dyspepsia; in large doses, as a vascular sedative in febrile affections, and especially in acute rheumatism. In dropsical affections, its action on the kidneys has sometimes proved useful.

"*Dose.* Gr. v. to ℥j, as a refrigerant and diuretic; ℥j to 3j, as a vascular sedative.

"*Adulteration.* It may contain traces of sulphate or chloride; detected by chloride of barium and nitrate of silver: lime, if present, would yield a precipitate with oxalate of ammonia."

* * * *

"*CAFFEINE*, a principle obtained from coffee, or the berry of *Coffea Arabica*, a plant belonging to the order *Cinchonaceæ*, contained also in tea and *Ilex Paraguensis* or Paraguay tea, *Paulinia sorbilis*, and other plants used by different nations to form beverages, has also been employed in medicine. When pure, *Caffeine* or *Theine* forms beautiful silky prisms, soluble in water, alcohol, and ether, precipitated by tannin, and sublimes when heated. Composition ($C_8H_8N_2O_2$).

"Given internally, caffeine or a strong infusion containing it acts powerfully upon the nervous system, producing restlessness, palpitation of the heart, and other nervous symptoms. Caffeine also appears to possess the power of checking, in some measure, the changes or metamorphoses of the animal body, shown by the diminished formation of urea, which takes place under its employment. Coffee and caffeine may be given to relieve stupor from the use of opium or other narcotics, in nervous headaches, to arrest the paroxysms of spasmodic asthma, and in hooping-cough; also in some forms of intermittent affections. The action of caffeine requires further investigation, as in the infusions of coffee and tea a part of the influence may be due to the other constituents which are present."

A Translation of the new London Pharmacopœia, including also the new Dublin and Edinburgh Pharmacopœias, with a full account of the Chemical and Medicinal Properties of their Contents; forming a complete Materia Medica. By J. BIRKBECK NEVINS, M.D., Lond., &c. (Second Edition, 12mo.; Longman, Brown, Green, and Longmans, 1855, pp. 880.)

The arrangement adopted in this very useful work is the same as that of the London Pharmacopœia, the text of which is indicated throughout by being printed in large type; and the several articles of the materia medica are described in full under one or other of the preparations,—generally the most important. Thus, opium is described under the head of *Tincturæ Opii*; and cinchona and its alkaloids, under *Quinæ Disulphas*. The author has endeavored to prevent any inconvenience which might arise from the arbitrary arrangement by means of a very complete index. It is stated in the title-page that the work contains the new Dublin and Edinburgh Pharmacopœias, but this statement is not strictly correct. Every formula requisite for dispensing a pre-

scription contained in either of these is introduced; and whenever the pharmaceutical directions differ in any important respect from those of the London College, they are given in full; but when the directions for making certain articles, which are never prepared except by the wholesale chemist, differ very slightly from those of the London College, these differences are not given.

Now this work possesses several valuable features which will make it a favorite with the student.

One valuable feature is the succinct statement of the "*characteristic effects*" of remedies under a distinct heading. Thus under tobacco we find:

"*Characteristic effects.*—Vomiting, and intense muscular and vascular depression. It is distinguished from *digitalis* by producing greater muscular, and less vascular prostration; and in its greater effect upon the secretions generally; and from *belladonna* and *hyoscyamus*, by contracting the pupil."

Under conium we find:

"*Characteristic effects.*—*Conia* causes rapid paralysis of the muscular system. The voluntary muscles are first paralyzed, then the respiratory; next the diaphragm; and death ensues from asphyxia, caused by the cessation of respiration. The heart does not appear to be much affected. It does not produce insensibility, but the muscular paralysis prevents the expression of pain in animals under its influence. It causes coma, and sometimes raving delirium, and is a most active poison. One to five drops kill small animals in from two to ten minutes. It causes dilatation of the pupils.

"The general properties of the fresh plant agree with the above. It is thought to act especially upon the uterus, and is therefore frequently employed in cancer uteri to allay the pain, and also in dysmenorrhœa. It sometimes causes diarrhœa; and occasionally, though rarely, convulsions. Under its use tumors, supposed to be cancerous, frequently disappear."

Under *hyoscyamus* we find:

"*Characteristic effects.*—Sedative, generally without causing headache or constipation. The delirium which a poisonous dose excites is of a *furiosus* character. It differs from opium in the first of these characters, and from *belladonna* in the last, as well as in being less acrid, and causing less dryness of the throat."

Another valuable feature is a separate statement of the articles with which any article may be confounded, wherever any confusion might arise. After describing the *digitalis* leaves, for instance, we have:

"*Leaves for which they may be mistaken* [the description being illustrated by cuts].—*Hyoscyamus* and *belladonna*; from which they are distinguished by the following characters:—*Several leaves* are generally united together by the bases, where they have been all cut at the same time, as the leaves arise from the same portion of the stem. *Hyoscyamus* and *belladonna* leaves are generally separate, as they grow alternately at different heights upon the stem. If the dried *digitalis* leaf be carefully unfolded, its serrated edge may be traced, whilst *belladonna* has a smooth entire edge, and *hyoscyamus* has a smooth edge, from which large portions appear to have been removed. The under surface of *digitalis* has a white cottony appearance, and the upper surface is a dark green. *Hyoscyamus* is pale green, and there is scarcely any difference between the color of the two surfaces. *Belladonna* has a darker hue altogether, and has no white surface. *Digitalis* has exceedingly reticulated veins: *hyoscyamus* has a single prominent midrib and vein which proceeds down the centre of each lobe; *belladonna* has not reticulated veins, but they are more compound than those of *hyoscyamus*."

Again, under *conium maculatum*, we have the distinctive features of this plant, and of the other umbelliferous plants with which it may be mistaken—the description in this case, also, assisted by cuts—clearly and succinctly stated:

"*Conium maculatum.* Stem smooth, spotted, not swollen below the leaves. Leaves tripinnate; dark green, shining sheathing; evolving a peculiar and disagreeable odor when rubbed. General involucre, three to seven leaved. Partial involucre, generally three leaved. Fruit, with undulated, crenated, primary ridges. No villæ. The whole plant, when bruised, has a peculiar odor, resembling that of mice, or cat's urine.

"*Æthusa cynapium* is smaller, not being above twelve or eighteen inches high. It is effectually distinguished by the *three depending* leaflets in the partial involucre. Its leaves resemble those of conium.

"*Cicuta virosa*. Stem furrowed, *not spotted*; leaves ternate, not tripinnate. General involucre either *absent*, or consisting of only one or two leaves.

"*Ananthe crocata*. Stem furrowed, not spotted, *swollen* below each joint. Leaves wedge-shaped, many cleft.

"*Chærophyllum* (*anthriscus*) *sylvestre*. Stem furrowed, and hairy; *not spotted*, though frequently purplish in color, but is *swollen* below each joint. General involucre, none.

"*Chærophyllum temulentum*. This is an exceedingly common plant, growing under every hedge, and by the highway side, and is very likely to be mistaken for conium, as the stem is marked by numerous purple spots. It is however easily distinguished by the following characters:

Conium spotted.

" smooth.

" not swelled below the joints.

Chærophyllum spotted.

" rough and hairy.

" swollen below the joints."

Another good feature is the addition to the chemical diagrams of arrows, the points of which indicate the nature of the result. When the arrow points upward it implies that a volatile product is obtained; when it points downward it shows that a precipitate is formed.

The work also contains a tabulated catalogue of the *Materia Medica*, and the sketch of a therapeutical classification; and, last of all, the printing and paper are very good. In a word, Dr. Nevins has presented us with a very readable and useful work.

The use of Alcoholic Drinks, and of Tea, Coffee, and Chocolate. By T. K. CHAMBERS, M.D., Physician to St. Mary's Hospital. ("Medico-Chirurgical Review," October, 1854.)

This article is of much value and interest as supplying us with the most recent information respecting the real action of alcohol and other accessory articles of food upon the animal economy, and also as furnishing some important practical suggestions. The sources from whence Dr. Chambers derives his information are almost exclusively German, and especially from Dr. Böcker—a gentleman who has lately made himself the subject of many elaborate investigations, and who, by weighing his food, and estimating his excretions under different circumstances, has furnished us with a most invaluable set of facts.

In the first place, then, Dr. Böcker has found that the metamorphosis of his tissues is greatly increased by the use of water in excess. This is a very important fact; for it follows that a person who drinks largely of water must have an extra allowance of food to supply the place of the tissues which are, as it were, washed away by the water. Hence to a poor man, as Dr. Chambers says, "an extra allowance of water can only be viewed in the light of an extravagance."

It is the same with salt. Salt in proper quantity is an important element in the process of digestion, for it is a solvent of the albumen of the food; but in excess it favors the solution of the tissues of the body, and necessitates a corresponding addition to the amount of food taken; and hence a poor man ought not to take much salt, for the same reason that he ought not to take much water.

On the other hand, alcoholic drinks, with tea, coffee, and chocolate, possess powers antagonistic to, or contrasted with those of water and salt, and the direct consequence of their use is to economize the amount of food required by the wants of the system.

Experimenting with pure alcohol—a tea-spoonful of spirits of wine taken seven

or eight times a day—Dr. Böcker found that the solid and fluid constituents of the urine, and the amount of carbonic acid exhaled by the lungs, were diminished; and that the cutaneous perspiration, the excretion of water by the lungs, and the fecal excretions, were not increased. The action of *beer* was found to be in the main like that of pure alcohol, any marked difference being ascribable to the greater degree of dilution with the antagonistic agent, water. There was one curious difference, however, and this was the greater amount of chloride of sodium excreted in the urine, when beer was taken—a difference due in all probability to the extracts of hops or malt, or to the ethers present in beer. The action of wine, though agreeing in the main with pure alcohol and beer, had also some differences of its own.

"The wines employed by Dr. Böcker were Niersteiner, a good second-class white Rhenish wine, and Walportzheimer, a red wine, made indeed in the Rhine country, but from the Burgundy grape. From one and a half to two and a half bottles were drunk daily, without otherwise altering the diet. The results were in both cases, a diminution of the quantity of carbonic acid expired, more marked, however, in the Walportzheimer than the Niersteiner; a striking diminution in the loss by earthy phosphates, and a scarcely perceptible alteration in the cutaneous, urinary, and fecal excretions."

The saccharine ingredients of alcoholic drinks exercise, no doubt, an important influence in the general result, for, on experimenting with sugar, Dr. Böcker found that it had the same power of restricting the waste of the system as alcohol. It was also found to restrict especially the waste of the bony tissues, for under its use there was a sensible diminution of the phosphates of the urine.

The salts present in wine must also exercise considerable influence in the matter, and we learn on the authority of the same experimenter that acetate of potass augments the general amount of solids in the urine, and chiefly by augmenting the chlorides; but, like sugar, it diminishes the amount of phosphates.

"There are, then, to be found in alcohol," says Dr. Chambers, "real uses—it is a defence against the evils of defective nutrition dependent on either social or pathological causes, as well as a defence against the wear of the body by that immortal part which is, indeed, the end of our being. And in mixed alcoholic drinks, we have presented to us modes of modifying these defences, so as to suit each particular case, whether national or individual. Surely then that is a truer philanthropy which turns its attention to increasing the variety and quantity of wholesome fermented liquors, than that which, by precept or example, endeavors to deter men from them altogether."

Dr. Chambers also relates experiments, mainly by the same indefatigable observer, respecting the action of tea, coffee, and chocolate, upon the system.

As regards *tea*, it is found that in ordinary doses it had no effect on the amount of carbonic acid expired, or upon the frequency of the respiration or the pulse,—that it very much reduces the loss of substance, as indicated by the amount of urea,—that it lessens the perspiration, and (in a still more remarkable degree) the amount of feces excreted,—and that, therefore, the body is more likely to gain weight, the diet being insufficient, when tea is taken than when it is not taken.

The action of *coffee* upon the system, as shown in the experiments of Dr. Julius Lehmann, is substantially the same as that of tea, in arresting the waste of the tissues; but it differs in the marked degree of excitement which is caused in the vascular and nervous system—an action which it is difficult to reconcile with the fact of diminished waste just mentioned.

Chocolate acts like tea and coffee; but the action is infinitely less marked; and, therefore, it cannot be regarded in the same economical point of view.

After having stated these and other particulars, Dr. Chambers proceeds to comment as follows:

"As respects the use of the three articles in a medical point of view, what has gone before indicates their mode of employment. When we desire to have the fullest physiological effects, with the least bulk, as a temporary medicine, we shall be best suited by strong infusion of tea; for in that the essential oil, which is shown before to be more energetic than the alkaloid, is predominant. If we would wish to choose as a daily drink that which is the most powerful of

ordinary beverages, we may take coffee of the consistency it usually is. If we aim at a less vigorous action, it is afforded in tea made weak, according to the customary method. If this is too violent for the patient, and at the same time he rebels against plain water, we may compound the matter by getting him to take thin chocolate.

"We may also learn from the observed physiological actions to simplify very much the indications and contra-indications of the use of this class of beverages by the sick. Where, for instance, we would limit the loss of substance, as in consumptions, colliquative diseases, the emaciation of fevers, &c., the accessory drinks are most valuable; they will, in acute cases, save a life which hangs on a thread, in chronic cases prolong the days to an almost indefinite period. In persons who have no disorder admitting of nomenclature, but who are what they call 'poor creatures,' that is to say, unequal to ordinary exertion of mind or body, without an exhausting loss of substance, a useless existence is often by these means made into real life.* The pathology of these cases, probably, is some incapability of taking up by absorption, or of making into blood, or of fixing in the solid tissues sufficient nutriment to supply the waste. They are, therefore, always on insufficient diet, however much they put down their throats. The obvious indication, then, is to limit the waste by some such means as the accessory foods. When, too, the nervous energy is sluggish, the circulation weak and slow, each may, by their cautious employment, be rendered normal. It is not necessary to quote instances of these facts, they are familiar to all as exemplified in the medical use of alcohol, but the same will also be found true of tea and its colleagues, in a minor degree, if we observe their actions. Of all, the great physical effect is to limit destructive absorption, increase nervous energy, and give mental pleasure. With equal clearness the contra-indications are pointed at by the experiments which have been detailed. When it is desirable that secretion should go on quicker, that destructive absorption should be encouraged for a shorter or longer period, then we must forbid accessory foods to a greater or less extent. In the hypertrophic temperament, they are noxious; the present author has long been in the habit of forbidding tea, as well as alcohol, to obese persons, with striking advantage; and he thinks that good effect has followed its disuse in cases of thickened heart in muscular subjects, though of course, the last result is difficult to trace. In gouty constitutions, the whole class disagrees to a greater or less extent. Fermented liquors are pretty generally, in the present day, cautiously used by such patients, without our advice; but they are not aware of the objections which may lie against tea and coffee, and the chance of cure by giving them up. A temperate barrister, a college friend of the author's, of a gouty family, used to endure a martyrdom from acid eructations and vomiting, with gastrodynia, &c., till he adhered to cold water instead of tea, coffee, or chocolate at breakfast, when his symptoms ceased. In certain skin diseases, which appear to persist from defect of destructive absorption, water-drinking is often a most salutary temporary measure; when the nervous system is too sensitive, when the circulation too excited, tea and alcohol are equally injurious, and *ceteris paribus*, should be abstained from. In fact, so many cases are benefited, that the homœopaths and hydropathists, whose whole secret lies in a combination of abstinence from accessory foods, with mental amusement, are able to vaunt their systems as a universal panacea. By the simple process of lying, wilfully, or ignorantly, they succeed in easily overcoming a difficulty which gives us much trouble; they gladden the patient's heart, by inducing him to have faith in a panacea, and enjoy himself in the country, at the same time as they augment the destructive assimilation in the body. If we keep this in mind, we may usually succeed in attaining the same object in an honest way: but it requires much thought and contrivance on our part, and good sense on the part of the patient. The difficulty is obvious enough—a vast number of cases of disease exhibit deficient nervous energy at the same time as they require an augmentation of destructive secretion, and *vice versa*, augmented excitability of nerve, while the destruction demands

* What shall be said of diabetes? The decided arrest of emaciation which the writer has several times seen result from the use of bottled porter, in spite of the sugar in it, strongly inclines him to favor accessory drinks in that disease.

arrest. Now, as the remedial discipline of accessory foods, or abstinence from them, combine the qualities in a *transverse* manner (that is, limited destruction and augmented nervous excitement, or augmented destruction and depression of nerve power), a very complex management of purely physical agents becomes necessary to make them beneficial. But why should we confine ourselves to purely physical agents? Why should not the mind be made to reciprocate the many benefits it receives from its slave? Why should not the joys of an easy sociable life in a beautiful country, new faces, shady woods, and mountain breezes, be made available to rational medicine as well as to empiricism? It is certain that a 'rational establishment,' would, in the end, answer as well as a 'homœopathic,' or 'hydropathic establishment,' and the undertaking may be conscientiously recommended to our speculative friends, who can obtain a good site at a moderate rent."

1. *On Preserved Meat-juice.* By R. CHRISTISON, M.D., Professor of Materia Medica in the University of Edinburgh. ("Monthly Journal of Medicine," January, 1855.)
2. *A new Broth for the Sick.* By JUSTUS LIEBIG. ("Annalen der Chemie" and "Dublin Medical Press.")

These two articles serve to draw attention to a point of much practical importance in the treatment of disease, namely, the *modus operandi* of beef-tea. The general impression is that this tea is simply nutrient; but is it so? Dr. Christison says the quantity of solid matter contained in it is too insignificant to be of any value as nutriment, and believes that it must act, so to speak, as a "digestive ferment"—promoting the assimilation of other nutriment—or, like coffee, it must lessen the waste of the tissues in the exercise of their functions. We are inclined to adopt the former opinion,—indeed, it is an opinion which we had arrived at before knowing that it was held by any one else, and one naturally arising out of the investigations of Liebig upon digestion and assimilation. Arguing from the similarity which Liebig has shown to exist between gastric juice and the "juice of flesh," we had arrived without any effort of our own at the conclusion that beef-tea must act as supplementary gastric juice, and for some time past we have always made a point of giving food to be digested along with the beef-tea. We have also recommended the tea as a *tonic* in cases of debility where the stomach seemed to be unable to produce its solvent juices in sufficient quantity. Arguing from the known antiseptic properties of gastric juice, we have also thought that beef-tea might do good in some cases, as in fevers, not only as a solvent, but as an antiseptic.

1. Dr. Christison's paper upon *Preserved Meat-juice* is of much practical interest. "About eighteen months ago," he writes, "when consulted in the case of a relative of Mr. Gillon, the manufacturer of preserved meats at Leith, I found that the patient was entirely supported, in a severe illness, by the preserved juice of meat, which had been given at Mr. Gillon's suggestion. Observing the readiness with which it was taken when other food of every kind was refused, I was induced to try it in other instances, and eventually to employ it in various states of disease. The results led me to suggest the use of it to many professional friends, and to advise the druggists of Edinburgh to keep it; so that it is now much in request, and may be easily obtained.

"This substance is the pure juice of beef, preserved in the way in which meats and vegetables are now so extensively preserved in the fresh state, for store provisions. The mode of preparation is as follows: Cylindrical cases of tinned iron are filled each with six pounds and a half of beef; and the lid is soldered on, but with a hole about half an inch in diameter in the middle of it. Two trays of such cases are shoved into iron retorts, analogous in form to retorts for gas-making, but double-cased, so that steam may be introduced into the interstice around. They are thus subjected to a heat of 220° under steam pressure, for about three hours; by which the beef is partially cooked, and, being thus also made to contract strongly on itself, squeezes out a portion of its juice, amounting to a few ounces from each tin. The tins are then drawn, the juice is poured out, and the meat, with certain additions, is subjected to the

preservative process. The juice, after being cooled and entirely freed of fat, is put into small four-ounce tin cases. Each of these has a small aperture at one end, which is secured with solder after the juice is poured in. The tins are then subjected, on trays, to a temperature of 220° in a muriate of lime bath. On being removed, the solderer rapidly touches with his iron the solder on the top, which giving way allows steam to rush out forcibly and carry with it the air in the upper part of the interior. By the time he has thus swiftly passed over sixteen or twenty tins, the first is ready for being resoldered by a similar dexterous application of his iron, which then in succession as quickly secures the whole open and steaming apertures. The process of heating in the bath, tapping, and resoldering is then repeated a second time, to make sure of the thorough expulsion of every particle of air. The tins finally are painted to preserve them against rust.

"The process is most perfect. I have repeatedly opened tins eighteen months in my possession, and stated to have been many months in store when I got them, and in every instance the contents had the rich delicate aroma and taste of fresh beef-juice. Sometimes the taste is slightly resinous or soapy, in consequence of a little resin having obtained admission in the operation of soldering. But as this does not occur often, the impurity may be avoided with due care. The juice may be taken with relish in small quantity, either cold or warm, in its concentrated shape; but it is rather strong to be used without dilution. When diluted with three times its volume of boiling water, and duly seasoned with salt and pepper, it makes a more palatable beef-tea than any which can be made in the usual way. Sometimes, indeed, a patient will be found to prefer the ordinary sort, either because the preserved juice has unluckily been resinous, or on the principle that leads some people from the plains of England to prefer hard water to the pure mountain springs of the primitive districts of Scotland, viz., because they are not accustomed to the finer sort. But this is not the general fact; and there can be no doubt that the preserved meat-juice makes a most palatable beef-tea, and an equally eligible basis for many soups.

"Until about ten years ago, in concurrence with general opinion, I used to regard beef-tea as a highly nutritive article, not to be rashly or freely given during disease. My sentiments in this respect were shaken, when I ascertained, in the course of some experiments for adjusting the dietaries of the General Prison and the Royal Infirmary, that a pint of the very finest beef-tea contained scarcely a quarter of an ounce of anything but water. Since that time I have much more readily listened to the cravings of patients for beef-tea in even many acute diseases, and above all in protracted subacute diseases, and in chronic diseases with fever; and I have thought I saw that it maintains the strength almost like wine, lessens emaciation and weakness in tedious diseases, and does not occasion any increase of reaction. There is no disease in which these properties are more remarkably shown than in protracted cases of gastric fever, of which, by the way, I have seen an unusual number, both in town and country, during the last three years. These cases have often lasted for six weeks, or—with a relapse, from too early indulgence or exposure—for the long term of three months nearly; during which little, or absolutely nothing else, was taken, except beef-tea or diluted meat-juice; and without the attenuation and debility which so protracted a fever and want of appetite ought to have induced. In some instances I could scarcely doubt that life was preserved by this nutriment. It is unnecessary to particularize the various states of disease in which the same practice has been followed. It is peculiarly applicable to all subacute protracted diseases, whether febrile or otherwise; and in all such there is even no great reason to hesitate in resorting to it when local inflammation is present. Every one, I think, will be struck with the readiness with which such patients will often take diluted meat-juice or beef-tea repeatedly when they refuse all other kinds of food. It should be given in the quantity of a tea-cupful at a time, every four or six hours; but it is well to alternate it with other simple nourishment, when the patient will consent to do so.

"What is its mode of action? Not simply nutritive. A quarter of an ounce of the most nutritive material cannot nearly replace the daily wear and tear of the tissues in any circumstances. Possibly it belongs to a new denomination of

remedies, whose action never was even suspected to exist until recently—those which, by some peculiar influence, diminish the waste of the tissues under the exercise of their functions. Professor Lehmann has proved (*Annalen der Chemie*, 1853) that coffee possesses this singular property in so remarkable a degree, that in persons following an active occupation an infusion of an ounce of roasted coffee daily will reduce the daily waste by a fourth part; and the same property seems likewise to belong to tea, and other restorative beverages. It is not improbable that the sapid and saline principles of meat, united in what is called ozmazome, and constituting the ingredients of beef-tea and meat-juice, possess some such property. It is difficult otherwise to account for the interesting results obtained by the late Dr. Edwards in 1833, who, in his researches on nutrition—strangely overlooked by the celebrated Gelatin Commission of the French Institute, in their condemnatory report on gelatin in 1841*—found that dogs die slowly if fed on bread and gelatin alone, but when thus greatly reduced, quickly regain flesh and strength by the addition of two ounces of meat-tea, which cannot appreciably increase their textures by its own insignificant amount of solids.† Either it acts as a digestive ferment, so to speak—promoting the assimilation of other nutriment,—or, like coffee, it must lessen the waste of the tissues in the exercise of their functions.

"Mr. Gillon's meat-juice contains only 6½ per cent. of solids. As a mere nutrient, therefore, it is much in the same category with beef-tea. Sixteen ounces of beef-tea, made with the contents of one tin, yield only 114 grains of solid extract. It contains no fibrin, no albumen, no gelatin. It does not even gelatinize, on exposure to the air for days: it is ozmazome, with the salts and sapid and odorous principles of meat, and materially different from all boiled extracts.

"I should add, that no good beef-tea can be made so cheap as with this preserved meat-juice. A tin of four ounces makes sixteen of strong beef-tea. This much requires, in the ordinary way, a pound of the finest beef, which at present costs ninepence, and is scarcely ever so cheap as sixpence. The reason for the cheapness of Mr. Gillon's meat-juice is, that the residual meat is economized, while that of the ordinary cooking process is good for nothing.

"It is a much more convenient article for use than any of the extracts made from meat by extemporary processes in the kitchen, or by certain very dubious chemical methods lately come into vogue. It differs materially from all meat-extracts prepared by boiling."

2. M. Liebig suggests the use of beef-tea made with cold water; and this suggestion has, we believe, been carried out to a considerable extent in Germany. To prepare this broth, half a pound of the flesh of a recently killed animal (beef, or the flesh of a fowl) is chopped fine, and well mixed with a pound and an eighth of distilled water, to which four drops of pure muriatic acid, and from half to a drachm of common salt, have been added. After an hour, the whole is thrown on a common hair sieve, and the fluid is allowed to run off without pressure. The first portion, which is turbid, is poured back, until the fluid runs off clear. On to the fleshy residue in the sieve half a pound of distilled water is thrown in small portions. In this way a pound of fluid (cold extract of meat) is obtained of a red color, and an agreeable taste of broth. The sick are allowed to drink a cupful, cold, at pleasure. It must not be heated, as it then becomes turbid, and deposits a thick coagulum of animal albumen and hema-tine.

With reference to this suggestion of M. Liebig, we would only add that beef-tea *ought* to be made with cold water if it supplies the place of gastric juice, for heat must damage its solvent powers; but we know of no experimental evidence on the subject.

On the employment of Wine as an Enema. By M. ARAN, Physician to the Hôpital St. Antoine at Paris. (*Bull. de Thérapeutique*, 15th and 30th January, 1855.)

After an extended experience during the last three or four years, M. Aran has

* *Comptes Rendus*, &c., 1841, xlii. 243.

† *Archives Gén. de Méd.* N. S. i. 313.

satisfied himself of the great value of wine enemata in arresting diarrhoea and in communicating strength to the patient.

He tells us that he has given wine with the most marked advantage during convalescence from acute diseases, and in chlorosis and phthisis. In chlorosis the results were so marked, that he even dispensed with iron, and trusted to the enemata alone.

He tells us, also, that these enemata were of especial use in obstinate cases of dyspepsia, where the general weakness of the system indicated the necessity of wine, but where the heat and irritability of the stomach were so increased by it as to contra-indicate its use.

Persons not accustomed to wine exhibited sometimes some symptoms of excitement after the enemata, but their stomachs were never disordered from this cause. There were no symptoms of excitement, however, when the quantity of wine was properly regulated. The wine was always mixed with water, and care was taken to prevent any loaded state of the bowel.

The advantages of this practice are self-evident, and we have no doubt that future experience will confirm all the anticipations of M. Aran.

On Digitaline. By R. CHRISTISON, M.D., Professor of Materia Medica in the University of Edinburgh. ("Edinburgh Monthly Journal of Medicine," Jan. 1855.)

Digitalis is, no doubt, a most valuable diuretic. Dr. Christison says it is "the best diuretic which medicine yet possesses." Digitalis has, also, a very marked sedative action upon the heart; but it does not act upon the heart and kidneys at one and the same time, and if the heart is sensibly affected, we must not expect to have any marked degree of diuresis, or *v. v.* This fact, which is not very generally known, was noticed by Dr. Christison when a student in 1821, and has been insisted upon by him in his lectures since 1832.

Digitaline, the active principle of digitalis, was discovered, and its properties very carefully investigated, by MM. Homolle and Quevenne. It is clearly a principle of great energy and virtue, and we are glad to learn more about it from trustworthy sources. It occurs as a brown extractiform substance, and a pale grayish-white powder, and it is the former which was used by Dr. Christison; but the latter is to be preferred if it can be got.

"My experience of the effects of digitaline," writes Dr. Christison, "has been highly satisfactory. I have used it expressly as a diuretic only; but its sedative virtues have also come incidentally under observation; and it is quite evident that digitaline is a most energetic remedy in both ways.

"In the first two trials made with it, which were both of them in cases of extensive, protracted, obstinate œdema in connection with disease of the kidneys, diuresis commenced, in one towards the close of the second day, and in the other a day later; in both the flow of urine was profuse; and in both the œdema entirely disappeared, but with the slowness not uncommonly observed in this form of dropsy.

"Here I cannot help observing in passing, that a striking illustration was presented, on both these occasions, of the unsoundness of the objection which has been brought by many practitioners, since it was first propounded by Dr. Osborne, against the use of diuretics in the renal forms of dropsy. I have taken every opportunity, in my clinical lectures, and in occasional publications, to protest equally against the unsoundness of the theory and the looseness of the facts, which have led to the prohibition of diuretics in renal dropsy, and which have deprived many persons of the most immediate and most efficacious means of relief from the principal secondary affection occurring in Bright's disease of the kidneys. And I may here repeat, in the strongest terms, that I have never, except in a single instance, seen the albuminosity of the urine, or any other indications—which either the other conditions of the urine or any other local symptoms can furnish,—increased under the employment of such diuretics as I have given in this disease. These are digitalis, squill, and bitartrate of potash, sometimes singly, more commonly combined. What may be the case with

other diuretics, I shall not pretend to decide. I strongly suspect that they are all in the same category, and that they have been shunned on grounds purely theoretical and baseless. But at any rate I can answer for the theory not holding in the case of the three diuretics I have mentioned. So, too, in the case of digitaline. It is not a little remarkable that in the first two patients to whom I administered it, the albumen, instead of being increased, was quickly and greatly diminished. In one it disappeared entirely in a few days, and did not return so long as the patient remained under observation in convalescence. In the other it also disappeared; but after some days the albumen reappeared, though in a greatly diminished proportion. Digitaline, therefore, while it stimulates the kidneys to increased secretion, has not, in so doing, any effect, as some have thought of digitalis and diuretics at large, in increasing the peculiar renal irritation which constitutes or occasions Bright's disease.

"Digitaline has proved equally, or even more serviceable in dropsy connected with disease of the heart. It has, in my hands, accomplished complete discharge of the dropsical effusions, and thus effected such relief as to enable the patient to return to his occupations, though given in circumstances apparently very desperate. In this respect digitaline has done no more than is often accomplished by foxglove itself. But it has appeared to me to act with more speed, and with greater force after the action did begin. In one instance, great depression of the heart's action was brought on instead of a flow of urine.

"I have also given it in some local dropsies, more especially ascites, either simple or combined with anasarca of the lower part of the body only. It has not proved more useful, however, as a diuretic in these cases than digitalis and other diuretics; which in general fail to influence the urine or remove the dropsical effusion, when given internally. I have not yet tried it externally, according to the method recommended by me with infusion of foxglove.*

"There can be no doubt that digitaline possesses the action of foxglove itself upon the heart and circulation. I have not made express trial of this action. But while using it to excite diuresis in a case of dropsy with diseased heart, the pulse began to flag, soon fell to 44, and became very soft and somewhat irregular. At the same time languor, nausea in a slight degree, and faintness ensued. All these symptoms disappeared in a few days after the remedy was discontinued. On this occasion I observed that the two actions of digitaline, its diuretic and sedative actions, do not concur. It is very likely that they are even incompatible. This I have formerly stated to be a probable fact in regard to the actions of foxglove.† The disregard of it is, I apprehend, the reason why some underrate the efficacy of foxglove as a diuretic. Attention should therefore be paid to the fact in using digitaline.

"The dose to be administered is stated by MM. Homolle and Quevenne at a seventy-fifth part of a grain of digitaline, three times a day. I have never given any other dose. It is a very small one certainly. But a tenth of a grain will kill a little dog; so that the dose is only in proportion to its exceeding energy. The form I have used is that of a pill about a grain in weight. It is to be given with the conditions and precautions observed in using foxglove.

"Digitaline may be extracted from any part of the *Digitalis purpurea*; and it has also been obtained from the *D. lutea*. The leaves of the former yield as much as any other part of the plant, even as the seeds, and more conveniently. The dry powder is first saturated with cold water by the process of displacement. The diacetate of lead is then added, to throw down much inert matter. The excess of lead is removed by a mixture of carbonate and phosphate of soda. Lime is next thrown down by oxalate of ammonia. Digitaline in an impure state is now precipitated by tannin, collected, and dried with a gentle heat, after being mixed with litharge, to detach the tannin. The dry powder is then made to yield a dry alcoholic extract by means of alcohol of the density of 836. From this extract, impurities are washed away with a little highly-concentrated sulphuric ether. Digitaline alone remains.

"The process is troublesome, but will probably be simplified. The product is consequently expensive. But, after all, a cure with it is not costly, by reason

* Edin. Monthly Journal of Medical Science, 1850, xl. p. 310.

† Dispensatory, 1842, p. 401.

of its extreme energy. It is of good quality, if a solution in 200 parts of alcohol do not lose its bitterness until so diluted with water that the digitaline forms only a 200,000th of the solution.

"Digitaline of this degree of purity constitutes pale yellowish-white scales, easily pulverizable, intensely bitter, intensely irritating to the nostrils, and permanent in the air. It fuses about 212°, and undergoes decomposition at a temperature somewhat higher. It is neutral, and destitute of azote; soluble in 2000 parts of water, and in 100 parts of pure sulphuric ether; very soluble in alcohol, and still more so in chloroform. It cannot be crystallized or combined with acids. Strong hydrochloric acid forms with it a beautiful grass-green solution. Potash added to its watery solution destroys its bitterness, and substitutes astringency. The alkaline carbonates and caustic ammonia have the same effect, but act more feebly. Tannin throws it down from its solution in water.

"Foxglove yields by analysis three other neutral proximate principles, which MM. Homolle and Quevenne have called digitalose, digitalin, and digitalide; but it may be surmised that these are the results of chemical reactions, and not true educts. There seem to be also three vegetable acids, called, digitalic, an-tirrhinc, and digitoleic acids.

"Bouchardat and Sandras found that the seventh of a grain of digitaline, injected into the jugular vein of a dog, soon caused frequent vomiting, staggering, diminution of the pulse from 120 to 36, giddiness, and death in four hours and a half. A grain and a half caused death in 90 seconds. Three-fourths of a grain secured in the stomach caused violent efforts to vomit, extreme exhaustion, and death in three hours. In the dose of a twelfth of a grain they found that in man it occasions reduction of the pulse to one-half or two-thirds of its natural frequency, with disturbance of the senses, confusion, and fatiguing dreams, but only in one instance an increased flow of urine. Stannius ascertained that, in animals killed by digitaline, the heart, immediately after death, is motionless, and not excitable by galvanism, or any mechanical stimulus; while the voluntary muscles and intestinal muscles continue irritable as usual.

"MM. Homolle and Quevenne have given in their treatise many cases of their own and of others, on the internal action and uses of digitaline. The general result is, that, in the dose of a 75th of a grain, given three times a day, it usually acts as a diuretic in general dropsies, and with great speed and efficacy in reducing the effusion; that this action on the kidneys is not so certain where there is no dropsical effusion, but nevertheless may be often brought on in other circumstances also; and that it is not rendered more certain by any material increase of the dose. The next result is, that in about double the dose, and sometimes in the same dose, it reduces greatly the frequency of the heart's action, arresting at the same time irregular action of functional origin, and even sometimes that connected with organic disease of the heart, and relieving palpitation. Lastly, the dose cannot reach the twelfth of a grain without nausea and other incipient symptoms of poisoning showing themselves."

On the Properties of the Ordeal Bean of Old Calabar. By R. CHRISTISON, M. D., Professor of Materia Medica in the University of Edinburgh. ("Monthly Journal of Medicine," March, 1855.)

Dr. Christison prefaces his remarks upon the ordeal-nut, with some remarks upon the ordeal poisons of the negro-tribes of Western Africa. The poison generally used is an infusion of the bark of the *Fillæa suaveolens* and the *Erythrophleum Guineense*, two leguminous trees. If a man is accused of any heinous crime, and particularly of witchcraft, he is made to drink this infusion, and he is supposed to be guilty if he dies, or remains permanently injured by the effects of the poison; and according to this test few are accused wrongfully. The ordeal-bean, however, appears to be far more energetic than the barks in question, and there is reason to believe that it is the most singular and intense poison yet known.

Dr. Christison gives some very interesting particulars about the ordeal, but these we must omit, in order to leave space for his own personal experience in

the matter—an experience which is much too interesting to allow of abbreviation.

"The ordeal-nut of Calabar, called *Esere* by the natives," writes Dr. Christison, "is a leguminous seed or bean, about the size of the garden bean, but thicker. According to one account I have received, it is not produced in the Calabar district, but is floated down the river from the upper country. This is possible, for it floats in water; but it is not very likely. According to information communicated to me by Dr. Daniell, it was stated to him by the natives to grow in marshy places near Attarpah and Old Town in Calabar; and the Rev. Mr. Waddell was informed that the plant is everywhere destroyed by order of the king, except where it is preserved for supplying the wants of justice; and that the only store of seeds is in the king's custody.

"The seed is, I apprehend, quite unknown in Europe. Of several eminent botanists, including Mr. R. Brown, to whom I have shown it, no one has been able to recognize it as a known species. In order to describe it, it has been cultivated at my request by my colleagues, Professor Syme and Dr. Balfour, and both have succeeded. It proves to be a perennial creeper, of the natural family, *Leguminosæ*, and closely resembling a *Dolichos*. It has a large root-stock. The fresh plant has a heavy, strong smell, after being some time cut. Though two years old, it has not yet flowered; and, like other perennial creepers, it may require to form wood for several years longer before it bears flowers. I am therefore unable to describe it farther, or to name it.

"It has a hard, brittle, ligneous tegument, rather rough, and of a brownish-crimson or pale chocolate-brown color; but many specimens are ash-gray, apparently from slight mould. The kernels, which weigh from 36 to 50 grains, are always in good preservation, and never injured in the slightest degree by insects—a rare occurrence with tropical seeds. They are white and hard, but may be chewed; and they have the taste of the eatable leguminous seeds, without bitterness, acrimony, aroma, or any other impression on the organs of taste; in fact, they are scarcely, if at all, distinguishable in taste from a haricot-bean. This is a formidable peculiarity, were it possible for the seed to become a familiar poison in Europe. So far as I know, the property in question is peculiar to it, for all other poisonous seeds of the *Leguminosæ*, with which we are sufficiently acquainted, are bitter. The blandness of its taste is indeed so unusual a character that I was at first misled, and imagined that I had probably got a wrong and harmless seed; but I soon found that I was much mistaken.

"I began a chemical examination of it, with the hope of separating an active proximate principle, which assuredly must exist in it, and will prove to be a poison of appalling subtlety. But with my limited materials success was unattainable; for leguminous seeds are difficult to analyze; and in this instance there is the additional obstruction, that at every stage the want of any marked sensible property makes it necessary to perform a physiological experiment on one of the lower animals, otherwise we may follow a wrong direction in the search. All I can say is, that the seed, like others of its natural order, contains much inert starch and legumin, and 1·3 per cent. of fixed oil, also probably inert; that its active properties may be concentrated in an alcoholic extract, which constitutes 2·7 per cent. of the seed; and that this extract does not yield a vegetable alkaloid by the more simple of the ordinary methods of analysis.

"I shall now proceed to mention what I have observed of the effects of the ordeal-bean on the animal body. These are interesting, energetic, and in some respects peculiar, as it seems to affect directly and violently the functions of the heart, and the exercise of volition over the muscles.

"When a poison impresses powerfully both the circulation and some function or functions of the nervous system, it is a matter of great nicety to eliminate the true phenomena, especially by observation upon the lower animals alone.

"We know that some poisons, such as strychnia, and the various seeds and barks which contain it, cause, by direct irritation of the spinal cord, violent tetanic spasms of the voluntary and respiratory muscles, without impairing sensation, or enfeebling the heart, or clouding the mental faculties; and thus they occasion death by convulsive arrestment of respiration. Others, such as the urari poison, and conia, or hemlock from which it is derived, cause, by direct

exhaustive action of the spinal cord, the opposite state of paralysis of the voluntary and respiratory muscles, but still without influencing the heart, or sensation, or the mental powers; and so death arises in their instance from arrestment of respiration, by simple paralysis of the muscles which maintain it. Others, again, such as atropia, or belladonna, the plant which yields it, principally assail the functions of the brain, at first combining stimulus of some with exhaustion of others in the most singular and often grotesque concatenation, but inducing at last a state of profound coma, and as the result of this a universal muscular paralysis; and thus death ensues, equally as before from arrestment of the breathing, not however by direct action on the origin of the nerves which govern the muscles of respiration, but indirectly, through an influence on the cerebral functions, exactly as in ordinary apoplexy. We can likewise conceive a poison to possess only a simple and direct action upon the heart, producing exhaustion of its irritability, paralysis, and consequently death, by arrestment of the circulation; but no such poison is yet known.

"These are all instances of simple action on a single vital function. But many poisons exert a more composite action. Some, such as nicotina, and its source, tobacco, produce paralysis of the heart, and also a narcotic action on the brain. Others such as foxglove, and in all probability its active proximate principle, digitaline, not only possess this double action on the heart and brain, but likewise powerfully irritate the kidneys. Others, such as hydrocyanic acid and picrotoxa, the active constituent of *cocculus-indicus*, exhaust the functions of the brain, so as to induce coma, and at the same time irritate the spinal cord, so as to excite convulsions; and thus, here again we have death produced by arrestment of the breathing, indirectly through the brain, but concurrently with direct spinal irritation. In others, such as aconitina, and its source, monkshood, there is a singular combination of exhaustion of the heart's irritability, and of common sensation, but without any influence on the voluntary muscles, or on the mental faculties; and death arises by arrestment of the circulation.

"It is easy to see,—on considering attentively what must be the manifestations of these various actions, both simple and compound, but especially the latter—that extreme difficulty will often occur in seizing and rightly comprehending the facts, above all when the succession of phenomena is swift, and when the subject of observation is one of the lower animals, which cannot adequately express by external signs the varying influence of agents on sensation and the other cerebral functions.

"Hence it arises that many erroneous conclusions have been come to regarding the action of our most potent and interesting poisons. Take for example hemlock. This formidable poison was long supposed to cause death by coma, that is, a narcotic action on the brain. But I have shown in a paper published in 1836, that the mode of death is really by paralysis of the muscles and arrestment of respiration, through an exhaustive influence on the spinal cord. And it is easy to see where the source of error lay. For, when the muscles are paralyzed, sensation and the mental faculties will seem to a common observer to be paralyzed also; because the animal mechanism for producing expression is at rest. It appears that many persons think it an easy task to investigate experimentally the physiology of poisoning. But they are assuredly mistaken. A long apprenticeship must be passed before any one can observe with accuracy the phenomena of the action of poisons.

"These cautions are prefatory to the remark, that it is a matter of great nicety to apprehend the deceptively simple manifestations of the action of the ordeal-bean on the lower animals. Scarcely do signs of uneasiness appear after a fatal dose has been given, when the animal becomes in quick succession languid, prostrate, flaccid, immovable; respiration, now faint, speedily ceases; and death is complete. It may thus appear to die insensible and comatose. But this is not the case. So long as the power of expression remains, amidst the swiftly advancing languor, signs of sensation may be elicited. Or we might infer from the phenomena that it dies of paralysis of the voluntary and respiratory muscles. But this too is in all probability not the fact. For, on dissection immediately after respiration ceases, the heart is found in a state of paralysis; and it is

evident that a quickly increasing paralysis of the heart not only explains the mode of death, but might likewise account for the antecedent muscular weakness and flaccidity.

"These effects were well exemplified in the first experiment I tried, when twenty-one grains of fine powder, made into an emulsion with two drachms of water, were secured in a cavity in the subcutaneous cellular tissue of the flank of a rabbit. For three minutes there was no appreciable change. But the animal then evidently became weaker, especially in the hind legs. Its feebleness quickly increased, and was attended with slight irregular twitches of the muscles of the trunk and extremities, and occasional twitching of the head backwards. But sensation remained; for the animal struggled a little when held up by the ears, and resisted attempts to shove it from behind. In four minutes, when put upon the side, it lay in that position; which the rabbit always vehemently resists so long as it is able. The trunk and extremities immediately afterwards became quite flaccid. Respiration ceased in five minutes certainly; probably indeed sooner; but the precise time could not be fixed, owing to continuance of slight muscular twitches. The chest being immediately opened, the heart was seen pulsating slowly, feebly, and inefficiently for ten minutes; and when its cavities were then perforated, the left side gave out a much brighter blood than the right, showing that the circulation, owing to paralysis of the heart, had not been maintained after respiration had ceased. The muscles of voluntary motion contracted at this time vigorously under the stimulus of galvanism, and continued to do so twenty-five minutes after death.

"The same remarkable properties are possessed by the alcoholic extract of the seeds. When two grains and a third of this extract, obtained from one hundred grains of powdered seeds, were introduced into the cellular tissue of a rabbit in the same way as before, at the end of two minutes, without any previous indication, the animal suddenly became weak, fell on its side, struggled a little with its feet, and ceased to breathe in one minute more. On the chest being immediately laid open, the same phenomena were observed as in the last experiment.

"It is evident that this poison is one of great intensity of action upon the lower animals; but I have not endeavored to ascertain exactly its degree of energy. I may mention, however, that on making trial of the exhausted powder from which the extract used in the preceding experiment was prepared, although no effect could be detected in the course of an hour, in ninety minutes the animal was observed to become suddenly weak, and it died in a few minutes more exactly like the others. The result, which appeared unintelligible at first, was afterwards satisfactorily traced to the residual farina not having been carefully enough washed clear of the second spirituous decoction; so that a little of the poisonous ingredient was inadvertently allowed to remain before the farina was dried. The quantity must have been very small.

"The only other fact I have to mention relative to the action of the seed on the lower animals, is one observed incidentally by Mr. Macnab. As the seed vegetates, the two fleshy cotyledons or sarcolobes rise partially above ground. In this state one of the seeds growing in the Botanic Garden stove-house was attacked by two slugs, one on each cotyledon. Mr. Macnab observing that one of them had begun to swell about the head, he removed it for further observation; and in twenty-four hours it was found dead.

"Having ascertained the mode of death from the action of the ordeal-bean, I did not consider it advisable to study farther the details of its action by means of experiments on animals, because I had been fully informed as to this in a more precise manner by an experiment made with the bean in my own person. I shall conclude this notice with an account of what I experienced; and I trust the details will not appear needlessly minute, as they seem to me to establish an action of a very singular kind in the case of this poison, and one of which we might discover other instances among known poisons, had we equally precise opportunities of determining the true phenomena.

"Having some doubts whether I had obtained the true ordeal-poison, as it tasted so like an eatable leguminous seed, I ate one evening the eighth part of a seed, or six grains, about an hour after a very scanty supper. During an hour

that I passed in bed reading, I could observe no effect whatever, and next morning I could still observe none. I am now satisfied, however, that a certain pleasant feeling of slight numbness in the limbs, like that which precedes the sleep caused by opium or morphia, and which I remarked when awake for a minute twice or thrice during the night, must have been owing to the poison.

"On getting up in the morning I carefully chewed and swallowed twice as much, viz., the fourth of a seed, which originally weighed forty-eight grains. A slight giddiness, which occurred in fifteen minutes, was ascribed to the force of the imagination; and I proceeded to take a warm shower-bath; which process, with the subsequent scrubbing, might take up five or six minutes more. The giddiness was then very decided, and was attended with the peculiar indescribable torpidity over the whole frame which attends the action of opium and Indian hemp in medicinal doses. Being now quite satisfied that I had got hold of a very energetic poison, I took immediate means for getting quit of it, by swallowing the shaving water I had just been using, by which the stomach was effectually emptied. Nevertheless I presently became so giddy, weak, and faint, that I was glad to lie down supine in bed. The faintness continuing great, but without any uneasy feeling, I rang for my son, told him distinctly my state, the cause, and my remedy—that I had no feeling of alarm, but that for his satisfaction he had better send for a medical friend. Dr. Simpson, who was the nearest, reached me in a few minutes, within forty minutes after I ate the seed, and found me very prostrate and pale, the heart and pulse extremely feeble and tumultuously irregular; my condition altogether very like that induced by profuse flooding after delivery; but my mental faculties quite entire, and my only sensation that of extreme faintness, not, however, unpleasant. Dr. Simpson judged it right to proceed at once for Dr. Douglas Maclagan as a toxicological authority, and returned with him in a very few minutes.

"In his absence, feeling sick, I tried to raise myself on my elbow to vomit, but failed. I made a second more vigorous effort, but scarcely moved. At once it struck me—'This is not debility, but volition is inoperative.' In a third effort I was more nearly successful; and in the fourth, a resolute exercise of the will, I did succeed. But I could not vomit. The abdominal muscles acted too feebly; nor were they much aided by a voluntary effort to make them act. I then gave up the attempt, and fell back, comforting myself with the reflection that vomiting was unnecessary, as the stomach had been thoroughly cleared. At the same time the sickness ceased, and it never returned. There were now slight twitches across the pectoral muscles. I also felt a sluggishness of articulation, and, to avoid any show of this, made a strong effort of the will to speak slowly and firmly, through fear of alarming my son, who was alone with me.

"Dr. Maclagan, on his arrival, thought my state very like the effects of an overdose of aconite. Like Dr. Simpson, he found the pulse and action of the heart very feeble, frequent, and most irregular, the countenance very pale, the prostration great, the mental faculties unimpaired, unless perhaps it might be that I felt no alarm where my friends saw some reason for it. I had, in fact, no uneasy feeling of any kind, no pain, no numbness, no prickling, not even any sense of suffering from the great faintness of the heart's action; and as for alarm, though conscious I had got more than I had counted on, I could also calculate, that, if six grains had no effect, twelve could not be deadly, when the stomach had been so well cleared out.

"Presently my limbs became chill, with a vague feeling of discomfort. But warmth to the feet relieved this, and a sinapism over the whole abdomen was peculiarly grateful when it began to act. Soon afterwards the pulse improved in volume, but not in regularity. I was now able to turn in bed; and happening to get upon the left side, my attention was, for the first time, directed to the extremely tumultuous action of the heart, which compelled me to turn again on the back, to escape the strange sensation. Two hours after the poison was swallowed, I became drowsy, and slept for two hours more; but the mind was so active all the while, that I was not conscious of having been asleep. On waking, the tumultuous action of the heart continued. In an hour more, however, I took a cup of strong coffee; after which I speedily felt an undefinable change within me, and on examining the condition of the heart, I found it had become perfectly and permanently regular.

"For the rest of the forenoon I felt too weak to care to leave my bed: and on getting up, after a tolerable dinner, I was so giddy as to be glad to betake myself to the sofa for the evening. Next morning, after a sound sleep, I was quite well.

"On considering this narrative, as well as the experiments on the rabbit, it will appear evident that one principal action of this extraordinary poison, and the immediate cause of death in fatal cases, is depression, ending in paralysis, of the heart. I think it may be also safely inferred, that another action is paralysis of the voluntary muscles, attended with suspension of the influence of volition. It does not appear to me that mere faintness is adequate to account for the extreme muscular inability I experienced; neither do I conceive it possible for me to have been deceived by the strong conviction I felt of the will being inoperative in its influence over muscular motion. My failure reminded me forcibly at the moment of a phenomenon invariably remarked during the impaired acuteness of the mind which often attends the early stage of hemiplegia. When the patient is told to stretch out the palsied arm, he stretches out the other, however pointedly the physician turns his attention on the powerless limb, and even though the patient himself keeps his eye on it; thus clearly showing that the will orders, though the muscles cannot obey.

"The integrity of the mental faculties, during the prostration of that cerebral function which conduces to the operation of the will or muscular action, was most remarkable. The minute details I have given are chiefly intended to illustrate this point; and I am persuaded that I have not overstrained any one article of evidence on that head.

"The apparent efficiency of coffee, in removing what remained of the poisonous action after five hours' duration, is not unworthy of notice. Every physician knows that coffee is used for dispelling the after effects of various narcotic poisons; but its real utility has been doubted. In the instance of the present poison, the *post hoc* at least was both very prompt and most complete, so far as the main symptom, the irregular heart, was concerned; and I have myself no doubt of the reality of the curative action.

"Whether the extraordinary power, which this poison possesses in depressing the action of the heart, may be susceptible of application in the exercise of the healing art, is a question which time and experiment will alone enable us to answer. Its mere potency is no objection, when it is considered that drugs so potent in poisonous energy as hydrocyanic acid, aconite, and digitaline, are now firmly established in medical practice as safe and efficacious remedies.

"Let me advert lastly to a peculiarity in the action of the ordeal-bean which struck me forcibly while laboring under it. Philosophers have thought it not unworthy of inquiry, how in criminal executions death may be completed without physical suffering to the criminal. Governments have even consulted science on the subject. But science has not yet satisfactorily solved the question. Meanwhile, I suspect it has been accidentally solved by the negroes of Old Calabar. At least, so far as the effects of their state-poison on myself went, there was no bodily uneasiness except the single attack of sickness—apparently the relics of the action of my peculiar emetic,—but simply a sense of sinking vitality, with clearness of mind, and without any sensation deserving in the slightest degree to be called physical distress. We know, indeed, that many forms of extreme fainting, of which this is evidently one, are attended with feelings, which, if not positively pleasurable, are certainly quite unallied to pain. Death by simple fainting, without any preparatory painful process, is evidently what a humane execution should aim at producing. And all this, I apprehend, will be effected by the Calabar Ordeal-bean."

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3. Pathological and Clinical Observations respecting morbid conditions of the Stomach. By C. Handfield Jones, M.B., B.A., Cantab. F.R.C.P., F.R.S., Assistant-Physician to St. Mary's Hospital, 8vo. 1855, pp. 226.
4. The Pathology and Treatment of Leucorrhœa. By W. Tyler Smith, M.D., M.R.C.P., Physician-Accoucheur to St. Mary's Hospital. 8vo., 1855, pp. 217.
5. Eutherapeia; or an examination of the principles of Medical Science, with researches in the Nervous System. By Robert Garner, Surgeon to the North Staffordshire Infirmary. 8vo. 1855, pp. 282.
6. The Diagnosis of Diseases of the Brain, Spinal Cord, Nerves, and their Appendages. By J. Russell Reynolds, M.D., Lond. 8vo., 1855, pp. 251.
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8. An Essay on the Action of Medicines in the System. By Frederick Wm. Headland, M.B., B.A., F.L.S., M.R.C.S., &c. 2d edit. 8vo., 1855, pp. 396.
9. Observations on the Diseases of the Rectum. By T. B. Curling, F.R.S., Surgeon to, and Lecturer on Surgery at, the London Hospital. 2d edition, 1855, pp. 129.
10. The Diagnosis of Surgical Cancer. By John Zachariah Laurence, Surgeon to the Northern and Farringdon Dispensaries. 8vo., 1855, pp. 77.
11. Lithotomy Simplified; or a new method of operating for Stone in the Bladder. By George Allarton, M.R.C.S., and L.A.C. 8vo, 1855, pp. 80.
12. On Lateral Curvature of the Spine, its Pathology and Treatment. By Bernard E. Brodhurst, M.R.C.S., Assistant-Surgeon to the Royal Orthopædic Hospital. 12mo, 1855, pp. 67.
13. The Essentials of Materia Medica, Therapeutics, and the Pharmacopœias. By Alfred Baring Garrod, M.D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in University College, and Physician to University College Hospital. 12mo, 1855, pp. 282.
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16. A Manual of Clinical Medicine, and Physical Diagnosis. By T. H. Tanner, M.D., L.R.C.P., Physician to the Hospital for Women. 32mo, 1855, pp. 306.
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18. Gout and Rheumatism, and the Curative Effects of Galvanism. By Richard Moore Lawrance, M.A., M.D. 12mo., 1855, pp. 196.
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21. The Pathology of the Bronchio-Pulmonary Mucous Membrane. By C. Black, M.D., F.R.C.S. Part II., 1855, pp. 155.
22. Contributions to Teratology. By A. Mercer Adam, M.D. 1855, pp. 32.
23. On the Statics of Pregnancy. By Matthews Duncan, M.D., F.R.C.P.E. 1855, pp. 20.
24. Case of Leucocythemia, with observations. By James Wallace, A.M., M.D. 1855, pp. 8.
25. On Sterility depending on certain diseased states of the lining membrane of

the Womb; its treatment and cure. By William Cumming, M.D. 1855, p. 12.

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26. A new plan of treating ununited Fracture. By Henry H. Smith, M.D., 1855, pp. 20.
27. A few remarks on the mode of administering Chloroform. By J. Chitty Clendon, M.R.C.S., Surgeon-Dentist to the Westminster Hospital. 1855, pp. 16.
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30. On the Excision of the Knee-joint. By Richard G. H. Butcher, M.R.C.S. 1855, pp. 60.
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HALF-YEARLY ABSTRACT
OF THE
M E D I C A L S C I E N C E S.
JULY—DECEMBER,
1855.

LIST OF BRITISH AND FOREIGN PERIODICALS REFERRED TO IN
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BRITISH.	FRENCH.
<i>Annals of Anatomy and Physiology.</i>	<i>Annales de Chimie et de Physique.</i>
<i>Association Medical Journal.</i>	" <i>d'Hygiène Publique.</i>
<i>British and Foreign Medico-Chirurgical Review.</i>	" <i>Medico-Psychologique.</i>
<i>Dublin Quarterly Journal of the Medical Sciences.</i>	" <i>d'Oculistique.</i>
<i>Dublin Medical Press.</i>	" <i>des Sciences Naturelles.</i>
<i>Dublin Hospital Gazette.</i>	<i>Archives Générales de Médecine.</i>
<i>Edinburgh Medical Journal.</i>	<i>Bulletin de l'Académie de Médecine.</i>
<i>Edinburgh New Philosophical Journal.</i>	<i>Comptes Rendus.</i>
<i>Glasgow Medical Journal.</i>	<i>Gazette des Hôpitaux.</i>
<i>Indian Annals of Medical Science.</i>	<i>Gazette Hebdomadaire de Médecine et de Chirurgie.</i>
<i>Journal of Psychological Medicine.</i>	<i>Gazette Médicale de Paris.</i>
<i>The Lancet.</i>	<i>Journal de Pharmacie et de Chimie.</i>
<i>London Medical Examiner.</i>	<i>L'Union Médicale.</i>
<i>Medical Circular.</i>	<i>Revue Médico-Chirurgicale de Paris.</i>
<i>Medical Times and Gazette.</i>	
<i>Microscopical Journal.</i>	GERMAN.
<i>Pharmaceutical Journal.</i>	<i>Annalen der Chemie und Pharmacie.</i>
<i>Statistical Journal.</i>	<i>Archiv für Physiolog. und Patholog. Chemie und Microskopie.</i>
	<i>Canstatt's Jahresbericht.</i>
	<i>Deutsche Klinik.</i>
	<i>Monatsbericht der Akademie zu Berlin.</i>
	<i>Müller's Archiv für Anatomie, &c.</i>
	<i>Schmidt's Jahrbücher.</i>
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	<i>Zeitschrift für Rationelle Medicin.</i>
	ITALIAN.
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9.8

THE
HALF-YEARLY ABSTRACT
OF THE
MEDICAL SCIENCES:

BEING

A PRACTICAL AND ANALYTICAL DIGEST OF THE CONTENTS OF THE PRINCIPAL BRITISH AND CONTINENTAL MEDICAL WORKS PUBLISHED IN THE PRECEDING SIX MONTHS.

TOGETHER WITH

A SERIES OF CRITICAL REPORTS ON THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES DURING THE SAME PERIOD.

EDITED BY

W. H. RANKING, M.D., CANTAB.,

PHYSICIAN TO THE NORFOLK AND NORWICH HOSPITAL,

AND

C. B. RADCLIFFE, M.D., LOND., L.R.C.P.,

ASSISTANT PHYSICIAN TO, AND LECTURER ON MATERIA MEDICA AT, THE WESTMINSTER HOSPITAL.

Apparatu nobis opus est, et rebus exquisitis undique et collectis, arcessitis, comportatis.
CICERO.

NO. XXII.

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ABSTRACT OF THE MEDICAL SCIENCES,

fc. fc.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, AND THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

(A) HYGIENE.

ART. 1.—*Results of Vaccination in the Prussian Army.* By Dr. SCHILLING.

(*Vierteljahrschr. für g. u. Off. Med.*, Oct. 1854; and *Phl. Med. Examiner*, July, 1855.)

THE results of re-vaccination in the Prussian army, from 1833 to 1852, both years inclusive, are contained in the following tables. There is no information, unfortunately, as to the time over which the protective powers of vaccination may be supposed to extend—for the greater number of soldiers in this army are renewed every three years; but one important fact is disclosed, and this is the progressive increase in the number of successful vaccinations—a fact which would seem to argue a growing susceptibility to the influence of the vaccine virus.

“This summary shows the total number of vaccinations during twenty years to have been 859,880 (1st column). Among these, 429,864 yielded successful cases, regular in their course (column 4, a). Those remaining without result, but re-vaccinated afterwards, successfully, amounted to 43,770 (column 5, a). So that in all, 473,634 cases of genuine and regular vaccination were produced.

“Of these successively re-vaccinated during twenty years, 545 were attacked with (column 7)

Varicella,	271	. . . .	Column 7, a.
Varioloid,	241	. . . .	“ 7, b.
Variola,	33	. . . .	“ 7, c.

“The year 1833 is strikingly remarkable as being by far the most unfavorable in its protective results. It would have been better to have omitted the first year, and only cited the last nineteen years, if I had only wished to produce the proofs of a statement, and not, at the same time, to make the utmost use of the whole of the materials at my command. But I must remember that this universal vaccination, without regard to whether it had been previously done or not, only commenced with the year 1834. A proper estimation of re-vaccination as it now exists in the army, can, in fact, therefore be obtained by taking into account the last nineteen years only.

Results of Re-vaccination in the Army.

1 Year.	2 Number of Vaccinated.	3 Scars showing previous Vaccination.			4 Of the new Vaccination the result was as follows:			5 Of those without successes were re- peated:		6 Number of genuine pustules obtained by the Vaccination.				7 Statement of the number of successful cases of re- vaccination that were attended with varicelous diseases.			8 Out of 100, true pus- tules ap- peared in
		a. Decided.	b. Un- certain.	c. None.	a. Regular.	b. Irregular.	c. No Result.	a. With successes.	b. Without successes.	a. 1-5.	b. 6-10.	c. 11-20.	d. 21-30.	a. Vari- cella.	b. Vario- loid.	c. Genuine varicella.	
1833	48,478	37,286	7,641	3,551	15,269	12,203	21,005	784	3,377	6,586	4,854	3,217	612	54	50	20	over 83
1834	44,454	33,034	7,134	3,686	16,679	12,287	15,488	866	3,664	6,763	5,028	4,088	800	46	31	2	" 39
1835	39,192	30,242	6,293	2,717	15,315	10,185	13,742	1,465	7,946	6,298	4,990	3,417	610	21	14	1	almost 43
1836	42,124	32,635	6,646	2,844	18,136	9,940	14,048	1,569	8,205	7,311	5,647	4,418	760	14	8	—	over 46
1837	47,258	37,299	6,903	3,056	21,308	10,557	16,393	2,243	9,771	9,174	6,414	4,767	953	14	7	—	" 40
1838	42,041	33,819	5,645	2,577	19,117	8,672	14,252	2,306	10,424	8,787	5,581	4,056	693	19	10	2	almost 51
1839	41,481	33,225	5,889	2,367	19,249	8,534	13,698	2,105	7,886	8,762	5,650	4,095	742	18	7	—	over 51
1840	43,522	34,573	6,177	2,772	20,952	8,820	13,750	2,831	8,958	10,021	6,875	4,171	885	7	2	1	" 54
1841	44,491	36,182	6,192	2,567	23,383	8,035	13,523	2,254	9,468	11,174	6,516	4,838	855	1	8	—	" 57
1842	42,682	33,185	6,751	2,646	21,865	8,056	12,661	2,029	9,536	10,697	6,228	4,200	745	9	4	—	" 58
1843	42,998	34,390	6,258	2,350	22,062	8,613	12,323	2,439	9,671	10,568	6,426	4,392	676	11	8	4	almost 57
1844	40,061	32,779	5,463	2,419	21,038	7,945	11,678	2,278	9,712	11,571	6,819	4,417	709	5	8	1	over 57
1845	42,671	33,813	6,041	2,817	22,214	8,764	11,693	2,749	9,974	12,298	6,944	4,917	894	2	3	—	" 58
1846	44,012	34,708	6,453	2,851	24,188	7,991	11,883	2,534	9,855	13,213	7,510	5,081	868	4	—	—	" 60
1847	43,596	34,264	6,405	2,927	25,544	7,426	10,627	2,718	8,952	13,295	8,164	5,767	1,036	—	1	—	almost 65
1848	38,859	22,386	4,211	2,262	16,882	4,404	7,573	1,579	5,786	9,161	5,134	3,513	653	6	1	—	" 64
1849	51,637	39,116	8,706	3,815	30,457	8,467	12,718	2,862	9,194	16,018	9,621	6,617	1,063	5	9	1	64
1850	44,589	33,466	7,053	4,040	25,090	7,509	12,000	3,355	8,766	12,461	7,964	6,092	868	10	22	—	61
1851	57,059	42,203	9,935	4,921	33,444	9,857	13,758	3,338	10,354	16,203	11,296	8,196	1,087	20	41	—	64
1852	27,775	21,195	4,242	2,338	17,782	3,920	6,073	1,468	4,639	8,413	5,967	4,304	564	5	7	—	69

"In these nineteen years, the number vaccinated upon their entrance into the army was 811,402 (column 1). The first vaccination was successful with 414,595 (column 4, a). Those unsuccessful at first, but successfully re-vaccinated, were 42,986 (column 5, a). The vaccination, therefore, took effect in a regular manner with 457,581. Of those successfully re-vaccinated during nineteen years, 421 were attacked in nineteen years

With Varicella,	.	.	.	.	.	.	.	217
" Varioloid,	.	.	.	.	.	.	.	191
" Variola,	.	.	.	.	.	.	.	13

"Of these 457,581 soldiers successfully vaccinated during nineteen years, 4 have died of variola.

"This result is indeed astonishingly favorable, for various diseases still exist and appear in all times and all places in our State, notwithstanding that compulsory vaccination and the extinction of prejudice have diminished from year to year the number of those who have avoided vaccination. An immunity from the contagion of variolous diseases exists neither in age, sex, race, nor constitution. The rate of mortality of the different epidemics, it is true, is very differ-

A. Year.	B. Attacked.	C. Died.	Of the Number re-vaccinated.		
			D. With success.	E. Without success.	F. No result.
1834,	619	38	2	6	30
1835,	259	5	—	2	3
1836,	130	9	?	?	?
1837,	94	3	—	—	3
1838,	111	7	—	2	5
1839,	89	2	—	—	2
1840,	74	2	—	—	2
1841,	59	3	—	1	2
1842,	99	2	—	1	1
1843,	167	3	1	2	—
1844,	69	3	1	2	—
1845,	30	1	—	1?	—
1846,	30	1	—	1	—
1847,	5	—	—	—	—
1848,	22	1	—	1	—
1849,	62	1	—	—	1
1850,	176	1	—	—	1
1851,	246	3	—	2	1
1852,	87	1	—	1	—
Total,	2428	86	4?	22?	51?
Or if we distribute the 9 who died in 1836 between the columns <i>x</i> and <i>r</i> ,					
The total would be, .	2428	86	4	25	57

"Note.—Of these 86 that have died, at least 5 had had natural smallpox, and on that account were not vaccinated (in the early years no statement thereof was made), while during the same time only 4 died who were successfully re-vaccinated."

ent, sometimes rising to 60 or 70 per cent., sometimes sinking to 15 per cent. of those attacked. The average mortality may be stated as about 30 per cent. The Prussian army, however, represents the male portion of the population of the State in the bloom and manly vigor of their age, dwelling in all parts of the country. They live distributed among the rest of the population, in part sharing the house with the citizen, therefore in the most favorable position for infection, and, in part, crowded together in barracks, therefore in a state best adapted to the further distribution of the disease. It has never failed to contribute its share to the increase of other epidemic diseases, when they have appeared; for instance, to typhus and cholera. With reference to the liability to variolous diseases, I here give the not inconsiderable number of cases in the whole army, without regard as to the result of the vaccination. In the whole army there were attacked with variolous diseases: (See table, p. 19).

ART. 2.—*Use of Lime-water in the formation of Bread.* By BARON LIEBIG.

(*Annalen der Chemie und Pharmacie*, and *Chemist*, March, 1855.)

To neutralize the deterioration which the gluten of flour undergoes by keeping, bakers add sulphate of copper or alum to the damaged flour. Professor Liebig, however, has conceived the idea of employing lime, in the state of solution, saturated without heat. After having kneaded the flour with water and lime, he adds the yeast, and leaves the dough to itself; the fermentation commences, and is developed as usual; and if we add the remainder of the flour to the fermented dough at the proper time, we obtain, after baking, an excellent, elastic, spongy bread, free from acid, of an agreeable taste, and which is preferred to all other bread after it has been eaten for some time. The proportions of flour and lime-water to be employed are in the ratio of 19 to 5. As the quantity of liquid is not sufficient for converting the flour into dough, it is completed with ordinary water. The quantity of lime contained in the bread is small—160 ounces of lime require more than 300 quarts of water for solution; the lime contained in the bread is scarcely as much as that contained in the seeds of leguminous plants. Professor Liebig remarks that "it may be regarded as a physiological truth, established by experiment, that corn flour is not a perfectly alimentary substance; administered alone, in the state of bread, it does not suffice for sustaining life. From all that we know, this insufficiency is owing to the want of lime, so necessary for the formation of the osseous system. The phosphoric acid likewise required is sufficiently represented in the corn, but lime is less abundant in it than in leguminous plants. This circumstance gives, perhaps, the key to many of the diseases which are observed among prisoners, as well as among children whose diet consists essentially of bread. . . . The yield of bread from flour kneaded with lime-water is more considerable. In my household, 19 pounds of flour, treated without lime-water, rarely give more than 24½ pounds of bread; kneaded with 5 quarts of lime-water, the same quantity of flour produces from 26 pounds 6 ounces to 26 pounds 10 ounces of well-baked bread. Now as, according to Heeren, 19 pounds of flour furnish only 24 pounds 1½ ounces of bread, it may be admitted that the lime-water bread has undergone a real augmentation."

ART. 3.—*Horseflesh as an article of Food.* By M. G. ST. HILAIRE.

(*Gaz. Méd. de Paris*, March 10; and *Journ. of Health*, June, 1855.)

We are far from satisfied with the philosophy of the following remarks. There must have been some reason why the horse was reckoned as unclean in the Levitical code, but apart from this objection, we may naturally ask whether the mere fact that the horse is so valuable as to be kept from the butcher until he is incapacitated from work by disease or old age, is not a strong objection to the use of his flesh as food? The case, however, is thus put:

"Why, then, does not the horse, a large animal, and the most extensively multiplied of our auxiliary quadrupeds, also furnish food? Like all herbivora, the horse produces an eatable flesh, rich in nitrogen, wholesome, and far from disagreeable to the taste."

"Baron de Tott relates, that having been sent as an ambassador from the King of France to the Khan of Tartary, he was in the latter country entertained with an excellent meal of horseflesh." [The use of horseflesh as an article of food by the Tartars is a well-known fact.]

M. Huzard, a veterinary surgeon, relates that in 1789, the Parisians ate horseflesh during three months, and that the public health did not suffer in the least.

Baron Larrey, the celebrated military surgeon, says that horseflesh is very convenient as food for man; it seemed to him especially nutritious. He often saw it used, and with the greatest advantage, by the soldiers and the wounded of the French army. During the siege of Alexandria, in Egypt, in order to overcome the repugnance of the soldiers to this article of diet, he killed his own horses and used them as food.

MM. Cadet, Parmentier, Pariset, and Parent-Duchatelet, have also reported favorably on the qualities of horseflesh.

Our repugnance to horseflesh arises simply from our long having ceased to use it. Anciently, both the horse and the ass were employed as articles of food. The use of horseflesh was at one time general among the inhabitants of the north and west of Europe. The reason for its disuse is thus given by M. Geoffroy St. Hilaire.

"The worshippers of Odin used the horse in sacrifice. When the animal was sacrificed, the flesh was served up on the tables of the priests and of all classes of the population. The eating of horseflesh was thus connected with the rites of the Odin religion, and was a great obstacle to the establishment of Christianity among the people of the north: for, whenever a Scandinavian, even though converted, ate horseflesh, his mind reverted to the recollection of his former faith. Hence at an early period the popes prohibited the use of this article of food. In the eighth century, Pope Gregory III wrote to St. Boniface, archbishop of Mayence, to 'abolish the custom by all possible means, and impose a proper penance on all eaters of horseflesh. They are unclean, and the act is execrable.' His successor, Pope Zacharias, renewed the interdiction.

"Now that the motive of the prohibition issued by the popes has disappeared for many years, the use of horseflesh is being gradually resumed; and it is remarkable, that it is first resumed by those who were the latest to abandon it. Denmark leads the way: in that country, horseflesh is sold publicly under the inspection of the government. For some years, Belgium has followed the example: and recently the Austrian government has authorized the public sale of this article of food.

"It is to be hoped that France will not be the last country to throw off old prejudices. A wholesome, nutritious, economical article of food is lost in France by millions: and at the same time there exists millions of individuals insufficiently fed, and physically and morally deteriorated. The use of this article of food would regenerate them, and give to the state a class of robust and intelligent servants. If Ireland had been put in possession of this article of food, that country would perhaps not have offered the spectacle of one entire people torn by famine from their ancestral soil.

"In conclusion, M. Geoffroy St. Hilaire observed, that at first horseflesh must be regarded as food for the poor; it is in this character that its utility will be first shown. The rich will use it if they please; and they ought to make use of it for the sake of example, and to prevent the poor from imagining that the use of horseflesh is one of the sad privileges of misery."

(B) ACUTE DISEASES.

ART. 4.—*On the Pathology of Pyrexia.* By Dr. PARKES, Physician to University College Hospital.

(*Medical Times and Gazette*, June 2, 1855.)

The various influences which seem to be active in fever, and to produce the complex phenomena of this disease by their combined action, are thus enumerated by Dr. Parkes, in one of his recent Gulstonian Lectures before the College of Physicians.

"First of all, we must place the entrance into the blood of a morbid agent, and the alteration of the blood, to a certain extent, under its influence. Perhaps this occurs under the incubative period, when often there is no rise of temperature, no fever that is, and when no appreciable alteration of the general health can be discovered. The nature of the change in the blood is unknown.

"Then, secondly, when the change in the blood has reached a certain point, the nervous system, or rather that part especially connected with nutrition and organic contractility begins to suffer changes in composition, which probably impede or destroy the normal molecular currents. When this occurs, the nervous symptoms of weakness, depression, rigors, and contraction of some parts and vessels, speedily followed by relaxation, mark the stage of invasion.

"Thirdly, and simultaneously, various parts, especially the muscles, and probably some of the organs, deprived in greater or less degree of nervous influence, begin rapidly to disintegrate, and by their disintegration produce supernatural heat.

"Fourthly. This metamorphosis is aided, in most cases, by the condition of the vagus and vasi-motor nerves, which cause increased action of the heart, and dilatation of the vessels.

"Fifthly. The contamination of the blood, already produced by the morbid agent, is increased by the check which the normal extravascular currents experience, by the pouring into the blood of the rapidly disintegrating tissues, and by the continued action of the morbid agent, which in almost all cases appears to act more rapidly and more powerfully in blood rendered impure in any way, either as shown by Dr. Carpenter by retention of excretions, absorption of septic substances, or, as in fever, by the too rapid metamorphosis of tissue.

"Sixthly. The various organs suffer (apart altogether from specific changes), and must, one would think, produce increased deterioration of the blood. Thus the lungs are congested in so many cases that we can scarcely suppose proper aeration to go on; the liver would seem, from Frerichs' observations to be, in some cases at any rate, in a most abnormal condition, and to produce compounds such as leucin, unknown in health—and the spleen in many fevers, if not in all, enlarges (in persons of a certain age), and is congested, possibly even to extravasation.

"But to these complex conditions another must yet be added; food is almost entirely withdrawn, and the various alkaline and neutral salts, unless supplied in the form of medicines, no longer pass into the system. But as in the excretions these salts are continually passing out, and are not restored, there must at last in fevers be a most unusual disproportion between the organic and the inorganic constituents of the frame. The blood will show this the latest, for it seems to maintain its composition, as far as the salts are concerned, with great tenacity; and it probably takes from the organs the ingredients it loses by the excretions. The exact influence of this loss of salts is not certain. The blood seems certainly to become less alkaline, and it is by no means improbable that this may render oxidation less complete than it should be, and thus cause some of those instances of retention of effete materials to which I have formerly referred.

"Thus the blood is contaminated by primary action of the agent, by the products of metamorphosis of tissue, by the loss of the salts, and by the altered action of organs; the nervous system is, therefore, day by day constantly more affected, and reacts still more on metamorphosis, the heat increases, the heart's action still quickens, and the fever reaches its acme."

Dr. Parkes lays great stress upon the influence of the nervous system in the causation of fever, and we think there is great cogency in his arguments. Certainly there is great clearness and force. In order that full justice be done to the writer, however, it is necessary to read all that he has written on the subject, and for this reason we will hope that before long we may have an opportunity of seeing these lectures on Pyrexia in a separate and extended form,—for no one can read what is written without wishing to read more. Speaking, then, of the influence of the nervous system, and premising that its investigation is vague and unsatisfactory, Dr. Parkes proceeds:

"The tests we have to employ are the symptoms of the diseased body, and

the only corrective is our physiological knowledge of the healthy working of the nerves. But the meaning of symptoms is often hard to understand, and the physiology of the nerves is yet almost a virgin soil, bearing often only enigmatical fruit.

"The time will come when the alterations in the nerves may be tested during life, and be recognized after death, by the electrical multiplier; it may be, possibly by muco-chemistry. But till that time arrives it becomes us to advance everything with caution, and to regard even our apparently most certain conclusions as only provisional.

"And yet, at the same time, if we are ever thoroughly to comprehend disease, the condition of the nervous system must be understood. The part it plays in every malady is no insignificant one. It modifies, controls, intensifies, cures, and kills. The blood itself does not so quickly carry to other structures the impression of the suffering part, and the old doctrine of sympathies has its side of truth. We must then search, if we are ever to advance, and conjecture, if certainty is ever to be attained.

"The arguments which can now be brought forward to prove the influence of the nerves in febrile affections impress different minds with different degrees of force. Altogether, however, it would seem, if we may judge both from the older and recent writers, that the essential participation of the nervous system is now doubted by few, and the chief subject of debate is the extent and manner of this participation. Few of the masters of our profession have left the subject untouched, and it would be curious and interesting to review the various opinions and hypotheses which have been advanced. This cannot, however, now be done, and I must proceed to a very brief statement of the various reasons which seem to show at any rate that the nerves are greatly affected, and perhaps to bear out Virchow's statement that this affection is the cause of the other more obvious symptoms.

"The most striking phenomena of fever are the augmented metamorphosis and the preternatural heat. Now, over normal metamorphosis and normal heat, the nervous system seems to rule paramount. The influence of the nerves on heat, as developed in muscular action, has been shown by Helmholtz; their regulating power over secretion has been proved by Ludwig; their control over nutritive processes has, if the experiments of Axmann are to be trusted, been at last experimentally established. At the very first step we have at once this question, Is it likely that the system which plays so great a part in normal heat, secretion, and nutrition, is inoperative and inert when all these processes are deranged?

"To this question a partial answer is given at once by the beautiful experiment of Bernard, which has conclusively shown that artificial disease of the nerves at any rate will alter both tissue-change and normal heat. It would appear as if the tissues at once began to suffer oxidation; as if, in fact, it were the nervous power which had previously prevented from destruction. The older and recent experiments in section of the nerves show the same fact. Thus, when, by section or extirpation, the controlling effect of the sympathetic in the neck is taken away, there occur at once hyperæmia and local development of heat, far exceeding the heat of the blood, in the parts not deprived of nervous influence. By the side of these physiological arguments we can place others derived from the early symptoms of fever, which seem inexplicable unless the participation of the nerves is admitted; and to these again we can add more or less cogent evidence afforded during the course and at the termination of these diseases.

"Among the very earliest symptoms of febrile affections are the remarkable depression, apathy, exhaustion, and debility, which were much and justly insisted on by Cullen. It is indeed possible that these may be the effects of a general nutritive failure, in which the nervous system merely participates in an equal, but in no higher degree, than other parts. If there were no other evidence of nervous affection, this argument might be a good one, although the nervous symptoms are certainly unusually prominent; but these acquire significance from being placed in juxtaposition with others.

"Another very early symptom of fever is one which seems to indicate most

decidedly a more than simple co-affection of the nervous system with other parts. I allude, of course, to the shiverings, the contraction of the superficial vessels, and of the skin. At this time, if not before, the tissue metamorphosis is most decidedly augmenting, for the heat of the blood is rising, as shown by these observations. We have at this time the remarkable subjective sensation of cold, and the rigors, which stand in such striking contrast to the augmenting heat. The explanation of this has been already alluded to, as being given probably by the nerves of the skin and cutaneous vessels, which transmit to the sensorium the condition of peripheral parts. If this be the case, we have the anomaly, pointed out by some German writer—Henle, I think—of the impression of cold being transmitted from distant nerves along the trunks of nerves, which, lying deeply, and being fed by vessels which are not contracted, must be hotter than usual, although they thus transmit the sensation of cold.

"Another very early symptom of fever finds its readiest, perhaps its only, explanation in some condition of the nerves. I refer to the increased rapidity of the heart's action, and to the relaxation of the vessels which soon follows the stage of contraction just referred to, or occurs without it. The increased cardiac action occurring at too early a period to permit us to refer it to altered nutrition of the fibres, or to action of a depraved blood in the endocardium, and reflex action, the hypothesis which refers it to a diseased condition of the vagus is much more probable than either of these propositions, for the vagus is the nerve which regulates the cardiac movements. The experiment of Weber seems to strengthen this supposition, for section of the vagus quickens at once the action of the heart, and the transmission of electrical currents, the nearest approach to the normal currents which we possess, at once lessens again the action. Volkmann again finds that section of the vagus produces an increased lateral pressure in the vessels. Therefore two of the most striking phenomena of fever, the increased cardiac action, and the relaxation of the vessels, can be artificially produced at will, by interfering with the nervous currents.

"The affection of the vagus has appeared to some so certain, that it has been attempted to prove it to be the essential and proper disease, from which all other febrile symptoms arise. Thus the heart's action being quickened, and the vessels being relaxed, increased circulation, general hyperæmia, and preternatural heat, would seem to be the necessary consequences. But this opinion does not bear examination; for there are cases of fever without quickened circulation, and when there is quickened circulation, it bears no relation whatever to the abnormal heat. On this point much evidence has been published, and I have myself accumulated proof upon proof, which I think it unnecessary to adduce here, that the quickened circulation in various febrile diseases, and the dilatation of the vascular system, as far as this can be judged of by the pulse, are entirely unconnected with, and independent of, febrile heat. And a physiological argument seems to settle the question that, besides hyperæmia, there must be increased tissue-change to account for the heat; for, in Bernard's experiment, the heat of the side of the heart which was deprived of nervous influence was greater than that of the blood; and though there was enormous hyperæmia, this, by itself, could never raise the heat above the temperature of the blood at large.

"The occasional absence of this increased cardiac action shows that, when it does occur, it is not owing to diseased blood, for this must exist in all cases; and this is an argument the more for locating the cause in the vagus.

"Another very early symptom of fever seems to find its most reasonable explanation in implication of the vagi. I refer to congestion of the lungs, which is so common in almost all febrile diseases as to oblige us to connect it rather with the general febrile state than with any specific disease. It has been lately shown by Woilley that, at the commencement of all acute diseases, in typhoid and rheumatic fever, in ague in some cases, in variola, in scarlatina, measles, and erysipelas, in acute inflammations of the heart, congestion of the lungs is so common, that it is discovered in 80·5 per cent., and is announced by unequivocal physical signs.

"The pulmonary congestion of a later period in most of these diseases in various degrees is a fact which has been long known. To what, now, is this

pulmonary congestion to be referred? To altered blood refusing to pass through the pulmonary capillaries, to perverted contraction of those capillaries, or to some alteration in the circulation consequent upon altered innervation? It must be confessed that we have few facts to guide us; but when we remember that section of the vagi produces (of course in a still higher degree) the same condition of congestion and œdema of the lungs, and that there is reason to believe, from the condition of the heart, that the regulating nervous currents of the vagi are altered, it seems most reasonable to refer the pulmonary congestion to the same cause as the augmented cardiac action.

"It may be possible, as observed by Virchow, to trace the effect of alteration of the pneumogastrics, or of the nerves connected with them, still further, even to the digestive organs, and to ascribe some of the early symptoms of anorexia and nausea to this cause, but it is unnecessary to push this argument further.*

"Pursuing now the fever into its developed period, we have a remarkable and very frequent phenomenon, viz., the evident periodicity which attends many cases, which can be accounted for only by acknowledging, not merely that the nerves are implicated, but that this affection is of that kind which subordinates and controls the other symptoms of the case. The symptoms in ague, and the wonderful periodicity which was shown by the late Dr. Graves to govern even the remote outbreaks of attacks, are the most striking examples; but the course of all the febrile affections, and even of the acute inflammations, indicate the same thing.

"I shall not venture, and do not further allude here to the subject of critical days; for it would require more time than could be given me to do justice to it; but I must remark that the experiments of Traube, and others, prove that this ancient doctrine must not be thrown aside, as an hypothesis born from the old mystery of numbers, or as a mere dream springing from the wild imagination of the East, and imported into Greece. There is much, though it is not easy to say how much, truth in critical days; and, if so, the nerves must surely play the principal part in their production.

"Again, in the course of fevers, the secretions are very much altered in quantity, and possibly, though of this we know nothing, in quality. Now, the nervous system certainly guides and controls the flow of secretion.

"Then, passing from the course to the end of fevers, we may observe that the occasional sudden termination in some cases, and the way in which some fevers, as ague, are readily cured by a few grains of medicine, which can scarcely be supposed to alter the constitution of the blood, but the action of which on the nerves is shown by other facts, are again arguments that, in these cases, the febrile symptoms are under nervous control.

"I must allude here to one most enigmatical mode of termination of fever, which possibly may be connected with the nerves. It is well known that in most severe fevers there occur instances in which patients die in the early stage, from an unknown cause. It is usually said that the pyrexia itself kills them, independent, as it were, of the specific disease. In such cases, no sufficient anatomical condition is found to account for death. In fact, the various chemical products, which, acting on different tissues, constitute the anatomical signs of the specific fevers, are not formed; there is fatal smallpox, or scarlatina, without eruption, fatal typhus, without a rash, fatal typhoid fever with very slight Peyerian deposit. How, then, do such patients die? It may be that there is some alteration in the blood, so profound, as to render life impossible; and, in proof

* Since this lecture was delivered, my friend Dr. Radcliffe Hall has given me the important information that he finds congestion in the hepatic veins to be also an invariable sequence (48 experiments) of section of the two vagi, and to be a frequent result of the section of one vagus. The congestion is confined to the hepatic vein; the portal system was not engorged. Dr. Hall writes: "My experiments were not published; they consisted of section through the vagus, partial section, partial burning with cautery, and partial ligaturing of the large ganglion of the vagus, all with the idea of setting up irritation in the ganglionic structure, and observing the results. I was disappointed to find that there was great difficulty in producing irritation, merely owing to the effusion of lymph consolidating the tissue of the ganglion and gluing it down to the parts adjoining, virtually occasioning complete constriction of the vagus through its ganglion, with the usual results of complete ligaturing of the nerve in any part of its cervical course, which are the same as those induced by section. Until the symptoms of such obstruction of nerve came on, very little physiological effect of any kind ensued. Gradually, as the lymph-compression of ganglion proceeded, slow, deep inspirations and dyspnea, and the usual sequel of pulmonary congestion and effusion, supervened, and, sooner or later, death, provided both nerves had been subjected to the experiment. There was no exception among the animals examined to the fact of hepatic venous congestion, I believe."

of this, it appears that purpuric spots, blebs filled with bloody serum from dissolved red particles, weeping of such red fluid from mucous surfaces, and such like evidence of a destroyed blood, are generally seen in these cases.

"But, besides this, may it not be that in these cases there is profound nervous lesion also? There is extraordinary prostration, a galloping and early-failing pulse, and an excessively rapid respiration, to account for which there is only pulmonary congestion. The mind, it is true, may be perfectly clear in these cases: but that only proves that one special part of the nervous system is untouched.

"Leaving, however, this doubtful point, the results of the argument in proof of the implication of the nerves may be thus summed up. These are: 1. The general physiological law that nerves regulate the metamorphosis of tissue and the production of heat, which are both altered in fevers; 2. Experiments on the sympathetic and the vagus, the results of which simulate, so to speak, or are identical with, the febrile phenomena; 3. Various symptoms which announce, accompany, or terminate fevers; 4. The effects of certain remedies.

"Whether these various arguments will appear sufficient to any one will, I think, very much depend upon the weight which he attaches to the physiological and the experimental part of the argument. Those who are imbued with a sense of the constant and necessary action of the nerves on nutrition will find their opinions give strength to the otherwise comparatively weak arguments which are drawn from the symptoms and the course of fevers.

"Against the view that the nerves are especially and essentially implicated, we have the argument that no decided experimental proof has yet been given of abnormal innervation; but then, in the present state of physics and micro-chemistry, this argument is really worth little.

"If there be perverted innervation as a necessary part of fever, in what does it consist?

"Two opinions only need be noticed: one advanced some years ago by Henle, that there is irritation of the nerves; the other, of more recent date, and founded upon recent experiments, that there is partial paralysis of the nerves, or rather of certain of the nerves.

"In favor of this last opinion we have the following facts:—

"Wherever, in experiments on nerves, the phenomena are like those of fever—viz., augmented circulation, relaxation of vessels, perverted nutrition, and abnormal heat—the state is one in which the nerve-currents are interrupted either by extirpation, section, ligature, or chemical destruction of the nerves. On the other hand, irritation of nerves by electrical currents produce phenomena different from those of fever. Thus the vagus is cut, the heart beats rapidly; when the cut vagus is irritated (so to speak) by galvanism, the heart beats again slowly; when the sympathetic of the neck is cut, the vessels of the side of the head enlarge, the part grows hot; when a galvanic stream is passed through the nerve, as in Dr. Waller's interesting experiment, the vessels contract, and the heat disappears.

"Other experiments, as already said, lead us to infer that section of the sympathetic or of other nerves connected with nutrition is always followed by disintegration of tissue, and perhaps even by final death of the part.

"Coupling these facts with the early symptoms of prostration and languor, we may conclude that the state of the nerves is one rather of exhaustion and paralysis, than of irritation and excitement."

ART. 5.—*On the Pseudo-pneumonia of Typhus, &c.* By Professor STOKES.

(*Medical Times and Gazette*, May 26, 1855.)

In a clinical lecture from which we take the following remarks, Dr. Stokes directs attention to those typhoid affections of the lung which may be confounded with pneumonia. "These conditions," the speaker says, "may easily be confounded with pneumonia. They have all the physical and other signs, except it be the sign of tympanitic resonance over the diseased lung. There is, however, a circumstance in connection with the resolution of these typhoid or typhous diseases of the lung, different from what is commonly observed in sthenic pneumonia. You know that the true inflammatory hepatization rarely disappears in

a sudden manner. It subsides gradually, and the transition-state between dullness and clearness on percussion is generally marked by the 'crepitus redux.' In the cases before us, however, and especially where the disease is secondary to typhus fever, the resolution, as I have before stated to you, is often singularly rapid, and is often unattended by the crepitus of resolution. If, then, you consider the state of solidification simply, we find it on the one hand to form without the crepitus of the first stage of pneumonia, and on the other to disappear rapidly, and without the rule of resolution. Thus we are permitted, as it were, to witness the silent and spontaneous development and retrocession of one of the secondary diseases of typhus.

"This change from the state of consolidation to that of permeability to air, this rapid change, unattended by the crepitus and resolution, probably shows that the real disease was one unconnected with inflammation, either as a primary or a reactive condition.

"You will remember that I suggested to you that some of the cases which have been described as typhoid pneumonia, might be held as examples of an aborted typhus. These were characterized by early consolidation, early disappearance of the typhous state, and a rapid, and often spontaneous subsidence of the local disease. I cannot help thinking that between such cases, and those in which the general disease runs its usual course, there is another class or category of cases in which the progress of the merely pulmonary disease is marked, more or less, by signs of irritation or inflammation of the lung, which inflammation or irritation is either reactive or specific, or both reactive and specific. And I apprehend that these cases which, as it were, float between the aborted and the perfect typhus, are much more numerous than might be supposed; and in such instances the case is often treated throughout, without a suspicion of its being really an example of typhous disease having been entertained.

"What has been now said should impress on your minds that rule in practice which I have so often urged upon you, namely, that the rules of diagnosis of local inflammatory disease which are good in ordinary cases, lose their value in a great measure when the patient has typhus fever. This was long ago proved by the researches of Louis on the condition of the brain in fever, and it was the nonrecognition of this fact which constituted one of the greatest errors in the system of Bronesais. I have told you, that if you gained nothing during the session but the knowledge and full appreciation of this great principle, your time would have been well spent. How many cases have we not had of headache, delirium, watchfulness, or its opposite, coma,—yet without encephalitis; and so it is with the remaining cavities—symptoms of functional alteration are met with in connection with the cerebral, pulmonary, circulating, and digestive systems in fever. They may or may not be attended by organic change, and that organic change, when it does exist, is not necessarily inflammation; and we cannot, I believe, lay down any satisfactory rule of diagnosis which would show, that in one case of local functional disturbance there was organic change, and in another that there was not. But this much we do know, that those groups of symptoms which are diagnostic of local inflammation in a case which is not fever, cease to be so when they occur in a case of typhus. Let this principle be ever present to your minds, for it is impossible to exaggerate its value. Long ago it was acted on empirically by the best physicians, who refused to adopt antiphlogistic measures in treating the local symptoms in typhus, and who employed stimulants irrespective of them, when the general condition seemed to demand such treatment. It now comes before you as the result of an extended and accurate pathological investigation, and the study of the pulmonary phenomena, as we have seen, enables us to go a step further, and to declare that not only are the symptoms of local irritation doubtful or illusive; but that even the physical signs of a pneumonia, when occurring in a case of typhus, are not to be taken as proof that a local inflammation has occurred.

"If these things be true so far as our typhus is concerned, it would appear probable, that in other acute diseases, under the influence of a law of periodicity, and, perhaps, in many that arise from the operation of an introduced poison, the same circumstances may be found, so that we might apply to a much larger

circle of diseases those principles as to the secondary local affections, which appear applicable to typhus fever."

ART. 6.—*On the Deafness connected with Fevers (typhus, smallpox, &c.).*
By M. TRIGNET.

(*Archiv Belges de Méd.* Juil. 1855; and *Gaz. Méd. de Paris*, Sept. 22, 1854.)

M. Trignet refers this symptom to inflammation of the internal ear, and his treatment is directed to the prevention of the accumulation of pus in the auditory cavities, and of the ruinous consequences of this accumulation. In order to this, he first tries the effect of leeching, cupping, or blisters in the neighborhood of the external ear. If this treatment fails, he catheterizes the Eustachian tube,—for this tube is obliterated from the first by the tumefaction of its mucous membrane,—and injects through the catheter certain emollient, anodyne, or slightly irritating solutions, according to circumstances. And lastly, if this treatment fails, he perforates the membrana tympani, and introduces the injection through the opening. Under no circumstances must the internal ear be allowed to remain distended with matter longer than can be helped.

ART. 7.—*On certain spasmodic complications occurring in Typhoid Fever.*
By M. ARAN.

(*Gaz. Hebdom. de Méd. et Chir.*, May 4, 1855.)

This is a complication which has been only noticed occasionally, and which may very easily, without great care, lead to serious error both in diagnosis and treatment. Similar symptoms have prevailed at different times in certain localities, and not always in connection with typhoid fever, but comparatively little attention has been paid to them.

M. Aran met with twelve instances of this complication during the first four months of the present year, in the Hôpital St. Antoine, at Paris, and all of them were in cases of typhoid fever. In eleven of these instances the symptoms made their appearance late in the history of the fever,—from the twelfth or fourteenth to the twentieth or twenty-fourth day. Their accession was marked by tingling in the limbs. After this the patient was seized with acute and painful cramps, these cramps being generally limited to the hands and arms, but extending occasionally to the inferior extremities, and even to the trunk and jaws, causing opisthotonos, trismus, and great difficulty in speaking and swallowing. These attacks, as a rule, lasted for several hours, and recurred for several days; and all this while the fever progressed through its ordinary course without any perceptible change. Pain was caused by any attempt to straighten the contracted parts, but this straightening was followed by immediate relief, so that the patient wished the attempt to be made. On the other hand the cramps might readily be provoked by squeezing the limbs. The spasm itself was very tremulous in its character.

Of the twelve patients mentioned, three died, evidently from typhoid fever. Their spinal cords were not examined; but M. Aran thinks that the character of the spasm was such, as not to allow us to suppose that any important alteration would have been found, if the examination had been made.

ART. 8.—*The state of the Respiration in Fever.* By Dr. SAMUEL WILKS.

(*Medical Times and Gazette*, May 12, 1855.)

The result of Dr. Wilks's observations is, that the number of respirations is increased in all febrile affections (care being taken to exclude all those instances where there was the slightest symptom of pulmonary complication or obstruction), and that this increase is quite irrespective of the pulsations of the heart. He says:

"For although the action of the heart and lungs is no doubt, to a certain extent, associated, and the amount of work done by one organ is a measure of that done by the other; as, for example, when each is increased during any violent exertion; yet this is by no means invariably the case. There are times, un-

doubtedly, when the blood, containing more effete matter than it does at others, requires for its purification an increased action of the lungs, and yet the number of cardiac contractions may be of the ordinary amount. I believe this occurs in fever, and accounts for the phenomena which are observed—the constant dissociated action of the heart and lungs. In looking over a large number of reports, I find, as a rule, that the respiration continued high as long as the fever lasted, while the pulse was often at the natural standard, or even below it.

“Taking the ratio of the respirations to the pulse in health to be 1 to $5\frac{1}{2}$ or 6, i. e. reckoning the former at 12-14 per minute, and the latter at 70, and then looking at continued fever, we find the average pulse in that disease to be 100, and the respiration 25-30 per minute, making the ratio 1 to 3, instead of 1 to 6. Often even during the course of fever the pulse may be descending, while the respiration remains high. Thus, for example, a woman with typhus and a mulberry rash, and having no chest or abdominal symptoms, had a pulse 116 and the respiration 36 in the minute; the former soon became 100 and the latter 32; the pulse then sank to 90, and afterwards still lower to 52, while the respiration had only reached 26; the skin was still hot and dry, and the pulse descended still farther to 42, while the respiration was 22. The respiration is here seen as much above the standard number of health as the pulse is below it. Perspiration broke out, and the patient convalesced, and at the same time the pulse rose and the respiration fell until each had reached its natural number. In all cases of fever the pulse does not descend so low, but constantly in typhus, towards the height of the disorder, the pulse may be at 70 while the respiration is, as a rule, double that of health. The same facts as above stated may be found in scarlatina, measles, and other febrile diseases; but as it may be objected that a congestion of the lungs in fever and the exanthemata may be sufficient to account for the phenomena, we may take rheumatism, and selecting cases where no pulmonic or cardiac complication existed, we still find that while the pulse in number was only half as many again as in health the respiration was doubled or trebled. In cases where lemon-juice was given this difference was more than usually marked, for, as is well known, this drug is often observed to have a direct influence in lowering the action of the heart. In one case the pulse was 120 and the respiration 36; in three days the former was 70 and the latter 32; after three days more the pulse was still 70 and the respiration had reached 24. Thus the effects of the remedies had been to depress the heart's action, while the respiration was only lowered as the disease more slowly departed. In another instance of a lad where the pulse was 110 and the respiration 40, on the following day the former was 100 and the latter 32: in three days the pulse had fallen to 76 while the respiration was still 32, and during convalescence the pulse remained steady while the respiration gradually subsided to 17.

“The fact then being that the number of respirations in all febrile diseases is increased, I assume that this is indicative of a positive increase of function of the lungs, that the blood comes to the lungs loaded with an increased amount of effete matter to be eliminated, that the *besoin de respirer* is more felt, and that the function is for the time augmented.”

ART. 9.—*Some points in the treatment of Pyrexia.* By Dr. PARKES, Physician to University College Hospital.

(*Medical Times and Gazette*, June 9, 1855.)

“Dr. Parkes does not pretend to enter fully into the subject of treatment. He merely hints at certain points, and out of these we select the remarks upon the use of alkaline salts and coffee as especially worthy of attention.

“To insure the proper excretion in fevers is a much more difficult thing than to reduce temperature. It is, perhaps, best performed by constantly supplying to the system a due supply of alkaline salts, which are not now given in the food. The chloride of sodium, we know from the experiments of Bischoff, aids the formation and the elimination of urea. Whether it has the same effect in fevers has yet to be determined. The alkaline salts of potash, and probably those of soda, do certainly aid the elimination of urea and sulphuric acid in some febrile cases, in pneumonia, rheumatism, variola, and typhoid fever. Perhaps

they so act in all cases. The nitrate of potash seems also to aid elimination in some febrile cases, though it does not necessarily do so in health.

"I have observed a singular fact in several febrile diseases, viz.: that, at the first employment of a saline remedy, such as nitrate of potash, which is not a natural constituent of the frame, or iodide of potassium, there is sometimes for a day or two a marked lessening of excretion, as if the presence of this foreign substance had interfered for the time with the chemical processes then going on; afterwards elimination increases, as if the system had accommodated itself, so to speak, to the remedy."

Again:

"Much attention has been lately directed to the powerful effects of coffee, and of tea, and of cocoa, especially of coffee, in lessening the elimination of urea. The late observations of Dr. Julius Lehmann have shown that coffee, in health, has two powerful actions: it increases the nervous energy, and protracts the metamorphosis of tissue. He thinks there are antagonistic effects, but they may possibly be simply cause and effect. Lehmann only determined the urea and the phosphoric acid, which he found both diminished.

"It would be very interesting to know if coffee has the same effect in the febrile body as in health.

"I have made one experiment on the point, and I think none has yet been made known as having been performed by others. Although my observation is incomplete, I shall venture to give it.

"In a case of typhoid fever, which was so far favorable for the remedy as, though perfectly well marked, there was no diarrhoea or sweating, coffee was administered. During twenty-four hours the patient took $\frac{3}{4}$ j of infusion of colonial coffee (of course without sugar or milk). The coffee contained 207.888 grains of solid matter; there were only traces of chlorine; there was 1.738 grain of phosphoric, and 1.055 grain of sulphuric acid in the whole quantity.

"In the next twenty-four hours he took another $\frac{3}{4}$ j of coffee, containing 197.328 grains of solids. In the third twenty-four hours, $\frac{3}{4}$ j of coffee were given, which contained only 34.89 grains of solids.

"Unfortunately, before the experiment could be commenced, the temperature was beginning to decline, and the urea, the sulphuric, and the phosphoric acids of the urine were gradually diminishing.

"Thus, for three days during the height of the fever, about the eighteenth or twentieth day, the urea amounted to 429 grains in each twenty-four hours; the sulphuric acid amounted to 28.537 grains, and the phosphoric acid to 19.275 grains. On the following days, before the coffee was given, the fever was declining, the urea fell to 326.04 grains, viz., 103 grains less; the sulphuric acid fell to 23.34 grains, or 5 grains less; the phosphoric acid fell to 17.446, or 2 grains less.

"The coffee was then given, the diet and all other circumstances being unaltered. During the three days it was taken, and on the following day over which its action may be presumed to extend, the urea averaged, in each twenty-four hours, 277.04 grains; the sulphuric acid averaged 16.502 grains, and the phosphoric acid amounted to 9.227 grains. It thus appears that the lessened amount of urea was not more during the use of coffee than could be accounted for by the decline in the fever; but the fall in the sulphuric, and especially in the phosphoric, acid was extraordinary; deducting the grain of the sulphuric acid added in the coffee, the amount of the acid was $15\frac{1}{4}$ grains as against $28\frac{1}{4}$ and $23\frac{1}{4}$; the phosphoric acid did not exceed 8 grains as against 19 and 17.

"After the coffee was left off the urea and sulphuric acid soon increased again; the phosphoric acid fell still more the next day (to 5.5 grains), and then increased again.

"There appeared to be no modifying circumstances to interfere with the action of the coffee, and though the effect on the urea was not certain, yet, as it increased again when the coffee was taken away, and as the sulphuric acid was so diminished, it is probable that metamorphosis was checked. The lessened phosphoric might depend on lessened amount of disintegration of the nervous tissue.

"Certainly there seems good reason to try the effect of coffee in severe cases of fever with delirium and rapid wasting."*

ART. 10.—*On the therapeutical employment of Electricity in Cholera.* By M. SCHULTZ.
(*Weiner Wochenschrift*, No. 3 and 4, 1855.)

The object of M. Schultz, in this memoir, is to call attention to the possible good which may attend upon the employment of electricity in this disease, and with this view he communicates the results of his own experience up to the present time. These, then, are the results which he has obtained in a series of experiments with the ordinary induction-coil. The passage of the current caused more pain than it did in the healthy state. The passage of the current through the flexors caused persistent cramp, but if cramps already existed in these muscles they were relaxed by passing the current through the extensors. On introducing one pole into the rectum, and applying the other to the pit of the stomach considerable pain was caused in the bowels, if the conductor over the epigastrium was moistened, but if only dry, there was an agreeable feeling of warmth in place of pain, and the patient for the time ceased to have involuntary evacuations, though the character and amount of the evacuations were not changed. When one pole was placed at the front of the chest, and the other upon the abdomen, the pulse acquired force, and the cyanosis became less marked. The passage of the current along the course of the inferior laryngeal nerves had no appreciable effect in recalling the voice, though in two instances in which the experiment was tried, the patient in recovering seemed to regain his voice more rapidly than in cases where the experiment was not tried.

More evidence is required on this subject, and it is with a view to elicit this that the present memoir is published.

ART. 11.—*A prophylactic in Yellow Fever.* By M. HUMBOLDT.
(*Lancet*, Aug. 18, 1855.)

A nephew of the celebrated Humboldt is now creating much sensation at Cuba by the discovery of a prophylactic against yellow fever. He noticed that the sting of a small reptile, in Mexico, caused symptoms much resembling an attack of yellow fever, and he rendered the fact quite certain by a series of inoculations on a number of dogs. M. Humboldt then thought that, by exciting the symptoms in a mitigated form, he might perhaps preserve persons from an actual attack of yellow fever. He therefore took a piece of sheep's liver, weighing one ounce, and had it bitten by six of the little vipers; he allowed the piece of liver to putrefy, and inoculated some dogs with the expressed fluid. By a few inoculations, febrile symptoms were excited; but they soon went off, and the punctured spots presented nothing particular. The experiments were now extended to human beings, the first being men under sentence of death. The patients were twelve in number, and were inoculated by four punctures on the arm: they were in a few hours seized with headache and severe pain in the back, and for the next few days had regular attacks of a kind of ague during several hours. Afterwards, however, health became quite restored. More than 200 persons, either galley-slaves or Europeans newly arrived at Vera Cruz, were inoculated, and escaped yellow fever for the next three years. In 1850, 1851, and 1852, the persons inoculated were no less than 1438, and amongst these only seven had the yellow fever; they recovered. At New Orleans M. Humboldt inoculated 286 newly arrived Irishmen and Americans from the northern states, and none took the yellow fever during a very severe epidemic of the disease.

Experiments have lately, as we stated above, been made at Cuba, where yellow fever breaks out very frequently, and the first trials were instituted amongst the military of the garrison. Four regimental surgeons submitted to inoculation before the men, and had but slight symptoms; two hundred of the latter followed, and the authorities have sanctioned the founding of an establish-

* Since this lecture was delivered I have had the opportunity of trying it in a very severe and ultimately fatal case (from perforation). The urea did not appear to be diminished.

ment specially intended for prophylactic inoculations. We extract the above from "L'Union Medicale" and the "Revue Therapeutique du Midi," which latter journal obtained the information from a paper presented by M. Humboldt to the Academy of Sciences of Havana.

The editor of the "Revue" remarks very justly that the venom of the viper is very likely to be destroyed by the putrefaction of the sheep's liver, and that the results obtained might, after all, be owing merely to a dynamic modification occasioned by the inoculation of putrid matter.

ART. 12.—*On the treatment of Erysipelas.* By Dr. TODD, F.R.S., Physician to King's College Hospital.

(*Medical Times and Gazette*, July 14, 1855.)

Dr. Todd arranges the various cases of erysipelas into five groups, and he directs attention to these before speaking upon the treatment particularly. (The remarks occur in a clinical lecture.)

"*a.* There are certain cases of erysipelas which get well of themselves, and these are generally examples of the disease in a slight form, affecting the head and face only, or some other limited portion of the skin. Usually in the course of two or three days, especially if they are kept in a comfortable place, and have a little beef-tea, patients suffering from attacks of this intensity recover, and this, too, in some cases, despite of a lowering treatment, and of the use of such remedies as tartar emetic.

"*β.* In a second set of cases of this disease, the very opposite of the first class, the patient dies downright, if I may use the expression; he sinks rapidly, do what you will. This mode of termination is common to erysipelas, with most of the other diseases which are due to the influence of the poison, whether it be generated in the body, or be of atmospheric origin. Thus, in a considerable proportion of cases of cholera, it is perfectly in vain to attach very much importance to anything in the way of treatment, for the patient is dead almost before the case comes fairly under observation; and, in such instances, I doubt that any plan of treatment ever will avail, because the morbid phenomena are of such rapid accession, almost as rapid as if the patient had taken a large dose of arsenic or of prussic acid. The same kind of thing also occasionally happens in typhus fever, the patient being killed, within a very few days, or even hours of the commencement of the attack; and so, likewise, in all the exanthemata—small-pox, measles, scarlet fever, &c.,—all treatment often utterly fails, and death occurs during the first twenty-four or forty-eight hours of the illness.

"Hence, then, it becomes necessary in all endeavors to estimate the value of any particular plan of treatment in erysipelas, carefully to eliminate from the data upon which conclusions are to be founded these two classes of cases, viz., first, those which would get well of themselves; and, second, those which defy every attempt at treatment.

"*γ.* The third class of cases of erysipelas comprises those which recover under a suitable treatment, but in which there is a marked tendency to death, but which there is good reason to believe would terminate fatally if left to themselves.

"*δ.* The fourth group consists of those cases which pass through the early stages of the malady more or less favorably, but which then exhibit the secondary phenomena of the disease. In this class complete recovery may take place, or death may result from the extreme exhaustion which is frequently induced by the extension of the suppurative process, and by its duration.

"*ε.* In the fifth and last class, not only do the secondary phenomena of the disease manifest themselves, but, by some means or other, some morbid material finds its way into the circulation, in effect of which formations of pus take place in various parts of the body, and the patient dies of purulent infection, or pyæmia, as it is called.

"The treatment for erysipelas which I have for many years past adopted, is the stimulating and supporting plan; and this I would, from a long experience, recommend to you, under the conviction that it is the best adapted to save life,

and check the progress of the disease: and that under it you will seldom have to deal with the secondary phenomena of the malady.

"The treatment consists in the free and steady administration of food and stimulants; such as beef-tea, and some form of alcohol, brandy by preference, in regulated quantities, at stated and short intervals; and if drugs are needed, ammonia, bark, and chloric ether, in forms most agreeable or least offensive to the stomach. The beef-tea and brandy should be given at stated times, in small doses, two or three ounces of the former, and from two drachms to half an ounce or an ounce of the latter, slightly diluted with water. Two different forms of alcoholic fluid should not be given at the same time, such as wine and brandy, or beer and brandy, or gin and brandy; and for other nourishment it is desirable to observe the same rule, as far as possible. You must attend closely to the digestive power of your patient, and be careful to avoid exciting dyspeptic symptoms, such as nausea, sickness, hiccough, flatulence, by giving too much at one time, or by too great variety of stimulant or food.

"Sometimes in the course of an attack of erysipelas, the patient may become delirious, or he may fall into a state of coma. When this occurs, some authors would tell you that the erysipelas is inducing inflammation of the membranes of the brain. These notions are now, however, almost entirely exploded, and there is ample evidence that, if death takes place while the patient is in either of these conditions, the cerebral meninges are found, upon post-mortem examination, to all appearance perfectly healthy, or if there be anything amiss with them, it is that the vessels of the pia mater contain rather less blood than they ought to do, and that none of the products of an inflammatory process can be detected.

"It is during the first fourteen days of the illness, that these formidable symptoms are most apt to occur; hence the necessity of beginning early, from the first, with the supporting and stimulating treatment, which you will find a preventive both of delirium and coma. The lower you keep your patient, the greater will be the tendency to delirium or coma, and the more violent or profound will either be; and the development of either is an indication for pressing that treatment in the same or greater doses. Sometimes you will find that the coma persists, notwithstanding all the support you can give; and then you may generally conclude with certainty, that the blood has become poisoned by pus, or some other morbid agent, and that death from pyæmia is about to occur, or that local formations of pus are about to be developed in various parts of the body.

"In those cases in which the disease responds to the stimulating treatment, the delirium subsides, and speedily altogether disappears; the redness and swelling diminish; the pulse becomes softer, fuller, and less frequent; the fever decreases, and the state of convalescence is rapidly established.

"Sometimes, through feeble powers of digestion in the patient, or injudicious zeal on the part of the attendants, you may find that you are over-stimulating. What are the indications of this? They show themselves in sickness, in flatulence, in a sense of oppression, perhaps also in derangement of bowels. When such symptoms occur, nothing can be easier than to suspend the treatment for a few hours, to give only a little cold water, and afterwards to resume it cautiously in diminished quantities.

"The upshot, then, of all I have to tell with respect to the treatment of erysipelas, is to give stimulants and nourishing food freely, and from the very commencement of the attack. Don't trouble yourselves with too much attention to the secretions, as some are apt to do, who imagine that the alteration of these by gray powder, black draught, *et hoc genus omne*, is necessary to the favorable issue of the case, but who, by the time they have got the secretions into what they conceive to be a correct condition, find that their patient is fairly slipping through their fingers, and is dying, worn out, and exhausted. As soon as you are satisfied that the patient to whom you are called is laboring under erysipelas, at once begin to administer stimulants and nourishing food, using the precautions I have mentioned; and what I wish above all things to impress upon you is, that this stimulating treatment should be employed from the very beginning of the attack. With respect to the bowels, you must be guided by circumstances; if they are confined, you may open them by an enema, or by a dose of castor oil,

or some other medicine, which will neither irritate the mucous membrane of the alimentary canal, nor exhaust the patient's strength; always keeping in view that the poison of erysipelas is exceedingly depressing in its action, and that the object of all your treatment should be, first, to antagonise the poison, and, secondly, to uphold the patient's powers so as to enable him to bear up against one of the most lowering and debilitating diseases to which the human frame is liable.

"Now of all the stimulants, I believe, as I have already said, the alcoholic are the best, and I have witnessed such remarkable effects in such a variety of cases produced by their free exhibition that I am inclined to consider them as *antidotes* to the erysipelatous poison; and if I were to be restricted to any one remedy in the treatment of this disease, I should, assuredly, choose brandy. With a commissariat well supplied with brandy, and simple means to keep the bowels open, I think I could engage to keep erysipelas at a minimum among the wounded in our army in the Crimea.

"Some attach great importance to the use of the tincture of sesquichloride of iron in this disease. I have no doubt many cases such as those which I have placed in my first group will get well under that drug, partly and mainly because it excludes depressing treatment, partly, perhaps, from some tonic power in the medicine; but I would as soon think of trusting to it in the treatment of the third or fourth group of cases, as I would to the billionth of a grain of aconite, or of arnica, or sulphur, or any other homœopathic absurdity. The remedy, so far as I know, is unobjectionable in itself, but its power to do good is small; and if you try it, let me advise you not to trust to it alone, but merely to use it as an adjunct to the treatment which I have endeavored to impress upon you to-day. For, as I before said, there is a large class of cases of erysipelas which will get well without any treatment whatever, and, indeed, in spite of depressing treatment, because either the dose of the poison which these patients have imbibed has been very small, or else because their powers of resisting and holding up against the disease are very great; and in such cases you may amuse yourselves, if you like, with giving such remedies as the sesquichloride of iron. But in all severe examples of the malady, place your trust in food and brandy, freely given under careful regulation, and adopted from the very commencement of the attack."

ART. 13.—*Scarlet Fever occurring twice in the same person.* By Dr. JOHN WEBSTER, F.R.S.

(*Edin. Medical Journal*, Sept. 1855.)

Well-authenticated cases of this kind are very rare indeed, and hence the great value of a case such as the following, where any doubt as to the fact is altogether out of the question. Dr. Webster writes:

Having recently attended an unequivocal example of scarlet fever affecting the same young lady at two separate periods, during both of which attacks the patient was under my immediate observation, I am induced to relate briefly the chief pathognomonic features observed during both instances. And as at the same time several relatives witnessed the phenomena exhibited by the disease, on each occasion, throughout its entire progress, not the slightest doubt can be entertained respecting the distinct nature of the malady, which passed regularly through every phase. Indeed, some symptoms during the recurrent attack, proved exceedingly severe, and at one time were so marked, that considerable anxiety was felt respecting the result, which, however, soon became dissipated by the patient's favorable progress and ultimate recovery.

The following are the chief facts of the case observed at both periods: During the month of April last year, a nurse in the family of my patient had scarlet fever, then prevalent in the neighborhood. All the characteristic symptoms of that eruptive complaint manifested themselves in this patient, who, in due time, recovered. Subsequently the eldest daughter, Miss M——, then in her nineteenth year, was also attacked by the same malady. Afterwards a second female servant, as likewise a younger brother and sister of Miss M——'s, thus making five distinct cases of the above epidemic disease, which occurred consecutively amongst members of one establishment, and all dwelling in the same house.

Being perfectly cognizant of every fact specified, I would request particular attention to these important collateral circumstances, since they supply additional confirmation on the special point discussed.

The first symptoms in Miss M——'s primary attack of scarlet fever, which commenced on the 8th of May, 1854, were those commonly observed during ordinary invasions of that disease. The skin felt very hot, the pulse became greatly accelerated, the eruption appearing most copious over the chest, neck, and upper extremities. The febrile excitement now increased considerably; the throat was also affected, but not severely; the tongue soon assumed the strawberry appearance so common and pathognomonic in this malady, being also very red, swollen, and at first loaded with fur, but subsequently it got much cleaner. The eruption continued apparent during three consecutive days, then subsided, and after the fourth day the rash had entirely vanished. Subsequently every symptom of illness soon ceased; and the disease having passed through each stage satisfactorily, my patient in about a fortnight became convalescent.

Towards the end of March in the current year, scarlet fever again broke out in the same family, when a younger brother of Miss M——'s, but one who had escaped infection during the previous epidemic, now became attacked, every symptom being distinctly pathognomonic. The disease passed through its usual course, and constituted altogether one of the most severe examples of scarlet fever, ending favorably, which I have for some time attended.

Entertaining no fear of again becoming infected, and believing precautions wholly unnecessary against this reappearance of scarlet fever in the same house where it last year prevailed, Miss M—— assiduously attended her sick brother during the continuance of his malady. Indubitably this sisterly devotion mainly contributed towards producing my patient's second attack of that eruptive disease, of which the premonitory indications appeared on the 5th of April last, or almost eleven months after the primary occurrence of the identical malady in the same individual.

Towards evening of the day now mentioned, Miss M——, after feeling languid and faint, was seized with pains in different parts of her body, succeeded by rigors; then headache and hot skin, accompanied with sore throat, which were followed by an eruption on the skin. However, it was not till next morning, or the 6th, when every doubt respecting the patient's actual disease was dissipated. On the 6th, the surface felt exceedingly hot, pulse very frequent, and the eruption now appeared unusually copious over the entire person, particularly on the neck and extremities; face became swollen, had severe headache, with delirium; also sore throat, and enlarged tonsils; the tongue red, and exhibiting quite a strawberry appearance. In short, all the usual indications of scarlet fever were now manifested, and highly characteristic of that specific disease.

During the 7th and 8th of April the malady proceeded in the customary manner, the febrile symptoms being, moreover, unusually severe. Pulse 120, with much delirium, as also considerable nausea and vomiting. The eruption continued exceedingly copious over the whole body; face a good deal swollen, red tongue, and loaded with fur on the centre, but exhibiting still the strawberry aspect on its tip and edges. Throat much affected; tonsils and uvula being greatly enlarged, so as to impede deglutition, even of liquids, and also to render breathing often difficult. Cough now supervened; there prevailed great restlessness, and the nights were sleepless.

On the 9th the eruption began to decline, the fever was somewhat ameliorated, the tongue got perfectly clean, but deep red, and swelled. Throat continued bad, tonsils being still much enlarged, and partially ulcerated, although deglutition, as also the breathing, were now somewhat improved. Pulse less frequent, and scarcely any delirium. Throughout this, and three previous days, the usual pathognomonic symptoms of scarlet fever were unequivocal, the present attack having proved much more severe than the former similar affection.

By the 10th the eruption had almost vanished. Pulse tranquil; skin cool and moist; bowels freely opened; urine copious; throat greatly improved, a small abscess having broken during the previous night; slept several hours consecutively; cough less frequent; breathing, and also swallowing, considerably ame-

liorated, and felt altogether much better. Very little fever; and, although languid, the patient showed evident indications of future convalescence.

Passed a good night on the 11th, the acute symptoms having almost ceased. Tongue clean; tonsils less swollen, and is able to swallow with more facility; bowels open; kidneys secrete copiously; but the patient still continued weak.

During the 12th and 13th the symptoms were ameliorated in every respect; appetite not so bad; free from cough; throat better; enjoyed several hours' sleep during the part of two nights, and is much improved.

On the 14th Miss M— was able to get out of bed, being considerably stronger. Every day afterwards was marked by progressive improvement; the skin desquamated satisfactorily; and in twenty-one days from the first appearance of any eruptions I discontinued attendance, my patient having entirely recovered.

ART. 14.—*On Varioloid and Varicella.* By Professor TROUSSEAU.

(*Medical Times and Gazette*, Sept. 1, 1855.)

Many practitioners of high scientific repute believe that the same relationship prevails between varicella and varioloid as between this last and variola. This it is impossible to admit. If we bring an individual having genuine vaccine scars in contact with a smallpox patient, he may take a varioloid, and, while suffering from this, he may communicate a true variola to a subject who has neither been vaccinated nor had the smallpox. If we take the pus from a varioloid patient, and inoculate a healthy person, as has been done in epidemics when vaccine lymph has run short, we produce the legitimate smallpox. These are so many proofs of the identity of the two affections. It is not thus with varicella. It neither arises from contact with varioloid, or is capable of communicating true variola. We see it arise just as easily in persons who have had that disease, as in those who have been exempt from it; in the unvaccinated, and in those who have been vaccinated. M. Trousseau has seen an epidemic of varicella at the Necker Hospital, which attacked all the children, a short time after vaccination had been quite successful. This is an important question in hygiene, inasmuch as varicella, of itself, is an affection destitute of danger; and we may leave the subject of it in communication with surrounding persons, without the fear of finding a serious malady developed. The same practice, pursued in varioloid, might give rise to a mischievous development of variola.

Varioloid.—Thirty-five years ago, an authentic example of smallpox after vaccination was unknown, although Jenner had seen examples of this, and had indicated them; but, as there are always to be found persons more royal than the king, so there were practitioners who accorded to vaccine more than he who had discovered and propagated it had claimed for it. In 1825, a very violent epidemic of smallpox prevailed in Paris, during which individuals who had been vaccinated were attacked. M. Husson, who was one of the Vaccine Committee in 1800, and one of the most ardent promoters of vaccination, contested the validity of these cases; and so extraordinary was the circumstance thought to be, that whenever a varioloid patient arrived at the hospital, the bells were loudly rung, in order to call as great a number of practitioners together as possible for the verification of the fact. An epidemic at Edinburgh, and two at Marseilles, multiplied examples. The attention of governments became aroused, and especially in Germany, where re-vaccination has been rendered obligatory. At the present day, there is no hospital in which we may not see persons having the vaccine scars the subject of variola, and even dying of it. It may occur even as early as the second or third year after vaccination; and M. Trousseau has seen an infant at the Necker Hospital take a genuine variola six weeks after a successful vaccination. A mother and her three children also took it soon after vaccination, and in the woman, who died, it was confluent.

At its onset varioloid differs in no wise from variola. Fever arises and continues until the eruption appears. We see, however, more frequently supervene a scarlatiniform or petechial eruption, but it does not influence the prognosis unfavorably, as in variola. The eruption does not differ from that of variola, until the eighth day; but at the eighth day from the commencement, or the fourth

from the eruption, in place of tumefaction and inflamed areola supervening, we find the integuments become pale and flaccid. The pustules do not become larger, remain acuminate, and umbilicate but little. They dry without bursting, become rugous, and pass into the "horny" condition. Those of the limbs, in place of acquiring a size three or four times as large as those of the face, do not increase, and cornify in the same manner. By the tenth day the eruption is dry. In more serious forms, when the varioloid, as sometimes happens, is confluent, there is sometimes secondary fever; but at the tenth day, the tumefaction stops short, without any accident supervening, while in variola its doing so would be of fatal augury. The whole terminates with a rapid desquamation, although marks may remain, especially in persons with delicate skins.

Varicella.—When a child is brought to the Necker with varicella, the date of its admission is noted, and sixteen or seventeen days later, other children always exhibit the disease. If, on the contrary, it had been a smallpox case, other cases would have been observed from nine to eleven days afterwards—showing that the period of incubation is very different in the two affections. A child, in good health, whether vaccinated or not, whether having had variola or not, becomes suddenly the subject of a sharp attack of fever, there being present neither vomiting nor lumbar pain. The next day, or sometimes even the same day, fifteen or twenty red points are observed upon the skin, and some hours later the epidermis is raised. Twenty-four hours after the appearance of the red points, we observe bullæ or phlyctenæ, quite rounded in form, and transparent, as if they contained water. They resemble sudamina, magnified from ten to fifteen times. In variola and varioloid the eruption never assumes this bullar form. In those diseases, too, the fever and the eruption continue until the latter is completed. In varicella the phenomena take place successively. There is a day of complete apyrexia, the fever comes on during the night, and next day we find from thirty to forty points of eruption. The same takes place during the next twenty-four hours, and so on for four or five days, so that we have four or five successive eruptions. Twelve hours after the appearance of the eruption there is a limpid bulla formed, and forty-eight hours after the liquid has become lactescent, which is never observed in any form of variola. In variola discreta the eruption is of a very regular, rounded form, like a drop of wax dried upon the skin; but after two or three days the bullæ of varicella become unequal, irregular, and puckered, but never offer any appearance of umbilication. When pus begins to form in the phlyctenæ, a livid red, inflammatory areola is produced, larger in size than the variolous areola. When the pustule bursts it leaves a dark brown scab, having nothing in common in appearance with the yellow scab in variola, but much resembling that of ecchyma. From twelve to fifteen days are required for the complete evolution of a variolous pustule, while four, or at most five, days suffice in varicella. So little dangerous is this affection, that M. Trousseau knows of no example of its having terminated fatally. Still, in some children, who manifest the purulent diathesis, it is followed by successive eruptions of pemphigus, which terminate by exhausting the patient and causing death. But these deaths cannot be imputed to the varicella itself.

Thus, then, variola and varioloid are identical; while varicella is distinguished from these by the differences in its period of incubation and febrile paroxysms, by the form and duration of its eruption, and by the absence of danger.

ART. 15.—*On the prevention of Pitting in Smallpox.* By DR. JAMES WALLACE.

(*Glasgow Medical Journal*, July, 1855.)

After trying several means for preventing pitting in smallpox, Dr. Wallace arrives at the conclusion that gutta-percha dissolved in chloroform (as originally suggested by Dr. Stokes), is more effectual than any other; but that even this will not entirely prevent the deformity. He finds, also, that it is sufficient to make the application just before maturation is complete.

"In 1849, when acting as clinical clerk in the Glasgow Royal Infirmary, I painted with collodion—as originally suggested by Dr. Ranking, in the *Lancet* for January of that year—one half of the face of a patient laboring under semi-confluent smallpox, and was so much struck with its efficacy in mitigating dis-

figurement, that, on taking charge of the Greenock Infirmary, I determined on giving it a farther trial. I employed it, accordingly, in eleven cases, coming under my care in the spring and winter of 1852. Of these, five were confluent, two semi-confluent, three with the eruption discrete and moderately copious, and one with the eruption discrete, but very abundant. In one, the collodion was applied on the first day of the eruption; in another, on the second; in five, on the third; and in four, on the fourth. In all of them it was used some days previous to the stage of maturation, and the result in general was satisfactory, the pitting having been prevented to a considerable extent. But during the progress of the disease, the application was attended with no small inconvenience; for, when tumefaction set in, the collodion, from its want of elasticity, kept the parts in such a state of pain, heat, and tension, that several of the patients were with difficulty persuaded to let it remain on. For the same reason, also, it cracked so frequently, that gaps, which were formed here and there, had to be filled up by a reapplication of the solution, which, on subsidence of the swelling, became still farther necessary, because of the less prominent parts of the face being separated from the artificial pellicle. Nor were these disadvantages compensated for by anything like what has been called *abortion* of the pustules, for the progress of the eruption was just as if the face had been without any protection whatever, the only beneficial result having been mitigation of the pitting. Now, as this was the principal object in view, it became evident that the same effect was as likely to be produced, and with much less uneasiness to the patient, by having recourse to the application at a later stage of the disease; and as the efficacy of such a covering could depend, from what was observed, only on the exclusion of atmospheric air from the pustules when fully developed, and on its allowing cicatrization to advance in a way analogous to what is termed the modelling process,* the most suitable period seemed to be that immediately before complete maturation, when there is usually found a greater or less amount of swelling. By this method the face, on any subsequent increase in size, would be subject to considerably less constriction than by that first followed; and, on falling to its normal dimensions, would have the coating adherent to a much greater extent. But there would still be a great drawback in the inelasticity of the collodion, as well as in its liability to crack. I therefore gave up the use of that substance altogether, and had recourse to a solution of gutta-percha in chloroform,† which I have now employed in twenty cases,‡ four being confluent, seven semi-confluent, seven with the eruption discrete and moderate, and two with the eruption discrete but copious. In the whole of them it was painted on *immediately before complete maturation*, which occurred in three on the fifth day of the eruption, in three on the sixth, in ten on the seventh, in two on the eighth, in one on the ninth, and in one on the tenth. Under this plan, the increase that took place in the swelling was found to be in general moderate, and not such as to prevent the gutta percha yielding readily to it, nor to cause that feeling of heat and tension which was so much complained of by the patients subjected to the collodion application; and when the tumefaction subsided, the mask was found to adhere intimately to all the subjacent parts, except at the angles of the mouth, where, from the frequent motion of the lips, it invariably became detached. But this was easily remedied, either by touching lightly with a camel-hair pencil dipped in chloroform, the loose portion of the covering, which in that way became softened and collapsed upon the skin; or, which is better, by painting anew the exposed part of the face, without disturbing the separated pellicle at all. Farther than this no interference was necessary, the whole coating having been allowed to remain on till desquamation spontaneously occurred, when the face was found, in all the cases, to be in a very satisfactory condition. The ultimate result, too, was exceedingly favorable, scarcely any pitting having been noticed when the patients were dismissed,

* Miller's Principles of Surgery, p. 199.

† This seems to have been first used in cases of smallpox by Dr. Stokes of Dublin. Vide paper in "Dublin Quarterly Journal of Medical Science," for August, 1852, by the late Dr. Graves. According to the latter observer, it should not be employed till the eruption is *fully matured*, or even begins to exhibit the first appearance of collapse; but this stage is highly objectionable, in consequence of the cuticular covering of the pustules being then so much thinned, as to break readily while the solution is being applied.

‡ The whole of these, as well as those treated with collodion, are exclusive of fatal cases.

except in two or three instances, in which, however, it was moderate, and in which, but for the covering, there would, I am convinced, have been frightful disfiguration. At the same time it ought to be stated, that those cases which I had an opportunity of seeing, some months after their discharge, presented the marks much more distinctly than when under observation in the hospital, but still so modified, as to show that they had been very materially benefited by the means resorted to.

"From this it will be seen, that the gutta-percha, like the collodion, though to a much greater degree, succeeded only in mitigating, and not entirely preventing, pitting. Hence, some may be apt to conclude that its efficacy was much inferior to that of other applications, which have of late years been brought under the notice of the profession. But in estimating the comparative merits of these, regard should be had to the appearance of the patients, as exhibited *long after* they had been under treatment, as well as on their leaving the hands of the physician."

(c) CHRONIC DISEASES.

ART. 16.—*On Quinoidine in the treatment of Intermittent Fever.*

By Dr. DA COSTA.

(*Philadelphia Medical Examiner*, May, 1855.)

In this paper, Dr. Da Costa gives a tabular abstract of fifty-three cases of intermittent fever which were treated with this drug. The patients, for the most part, were Irish of the lower classes, who applied for advice at the Moyamensing House of Industry, and the type of disease was, almost without exception, quotidian. The average dose required to arrest the disease in an adult was twenty grains, six grains being given shortly before the expected paroxysm, and the rest during the interval. Of the fifty-three cases cited (in many of which the disease is stated as being of long standing), the chills were arrested in forty-nine cases by the first twenty grains. Only four required a repetition of this quantity. In ten cases the disease returned, but this is not to be wondered at, when it is considered that a minimum of medicine was given to the patients.

ART. 17.—*Intermittent Fever treated by Olive Leaves.* By Mr. SPENCER WELLS.

(*Medical Times and Gazette*, Aug. 11, 1855.)

These cases were treated in the Civil Hospital at Smyrna. The medicine was given in the form of a decoction made by boiling two ounces of fresh leaves in a pint of water.

CASE 1.—J. H., 62d Regiment, æt. 34, had intermittent fever in India in 1845. He was in hospital twenty-one days. The first eight or nine days the attack recurred daily; afterwards every other day. He remained free until May, 1854, when he had a slight attack in Malta. The next was in February last, in the Crimea. He had another in April, and was in hospital twelve days, the attack recurring daily. He had two attacks on board the vessel which brought him here, on the 4th of May. No treatment was adopted until the 9th, when he was ordered 3 grains of quinine three times a day. On the 11th he had the first attack in hospital, and was ordered 2 oz. of the infusion of olive leaves three times a day, the quinine being discontinued. The infusion was continued until the 17th, when he had another attack. The infusion was then changed for a strong decoction, which he continued until the 24th. He has had no return of the paroxysm since commencing the use of the decoction—upwards of six weeks ago. He has been kept in hospital since, in order to dilate an old stricture in the pendulous portion of the urethra.

CASE 2.—J. H., 41st Regiment, æt. 25, never had intermittent fever until he was at Varna, in July, 1854. He was then in hospital two months with quotidian. After he went to the camp, attacks occurred irregularly; he would be in hospital for a few days, and then go to duty. They occurred regularly every other day for some days before he left, and he had one attack on board ship. He arrived here on the 4th of May, but had no attack until the 17th. On the 18th, he was ordered a strong decoction of olive leaves every four hours, which

he continued regularly until the 28th. He had one attack after commencing to take the medicine, but has since been quite free. He remains in hospital on account of granular conjunctiva.

CASE 3.—F. D., æt. 26, Chatham orderly, had intermittent fever in Poonah and Hyderabad in 1852. It recurred at first every third day, afterwards every ninth day, for seven or eight months. He arrived in England in July, 1854. Had no attack in England. After arriving here in the spring he had two very slight attacks, but did not apply for medicine. On the 18th of June he had a smart attack at 7 P. M., which recurred at 11 A. M. on the following day. He took an emetic and effervescing draughts, and on the 20th the decoction of olive leaves was ordered every four hours as before. This he continued until the 26th, when he complained of pain over the liver, and the stools became light-colored. Half a drachm of the acetate of potass was given three times a day, and diluents used freely until the 1st of July; and he was discharged to duty on the 3d.

ART. 18.—*Researches on Gout.* By Dr. W. BUDD, Physician to the Bristol Royal Infirmary.

(*Lancet*, June 23, 1855.)

In a communication to the Royal Medical and Chirurgical Society, Dr. Budd tells us that, in 1852, he had the opportunity of examining portions of the cartilages of the knees and elbows, and the adjacent bursæ, from a man who died after having long suffered from gout. Subsequently, he has examined the knees, elbows, wrists, ankles, and most of the smaller joints, of seven other gouty subjects, and has found them to contain a deposit consisting of lithate of soda in combination with phosphate and carbonate of lime. The nature of the deposit was very different in the cartilages and bursæ. In the former it consisted almost solely of lithate of soda; in the latter there was an admixture of the calcareous salts, sometimes in large proportion. He found that the deposit in the cartilages was not placed on the free surface, but that it formed a thin layer immediately beneath the surface in the substance of the cartilage itself, this layer being also, in early stages of gout, often separated from the edges of the cartilage by a free margin, in which no deposit existed. He traced the deposition of the foreign matter as occurring, in many instances, around the cartilage cells. The lithate of soda, he, in common with many others, supposed to be an essential ingredient of the *materies morbi* of gout, but the calcareous salts to be only an accidental complication, originating in the common inflammation around the gouty joints. He then details the particulars of two cases of acute gout, in one of which he found a considerable quantity of urea (a known product of the metamorphosis of lithic acid) in the serum, obtained from a blister, and in the other from the blood; and he adds, that in nine other cases he had procured a large quantity of urea from blood or serum obtained from the patients, there being no albuminuria, and the kidneys being, in all, as far as could be ascertained, free from disease. From the facts and reasonings founded on them, Dr. Budd is led to the following inferences: 1st. That lithic acid (in combination with soda) is an essential and very principal ingredient of the *materies morbi* of gout. 2. That the result of the fit of gout is partly to deposit this compound in the least vascular structures of the joint, but much more largely to accomplish its elimination from the body, by converting it into compounds of a more simple order, such as urea, and admitting of more ready discharge from the body. (The paper is accompanied by drawings and microscopic preparations).

ART. 19.—*Cases of Leucocythæmia.* By Dr. WILKS.

(*Guy's Hospital Reports*, 1855.)

Dr. Wilks relates two of these cases, the one certainly, and the other probably, connected with disease of the spleen. In another case, and only one—that of a man dying of typhus—were the white corpuscles formed in any considerable excess; and yet upwards of fifty cases of a dyscratic character, such as anæmia, scurvy, and ague, were examined with a view to the settlement of the question,

whether the excess of these corpuscles is really connected with disorder of the spleen. The cases are as follows:

CASE 1.—Sarah R—, æt. 40, was a married woman, living at Chatham, where she had resided all her life. She had ague when a child, but not since. About two years before her admission into the hospital she observed a swelling on the left side of the abdomen, and this had been gradually enlarging since that time. It had given her no pain, and only inconvenienced her from its size. She had, however, become thinner and paler, and her health had altogether suffered much. On admission, under Dr. Babington, on April 20th, 1853, she was seen to be a pale, thin, cachectic-looking woman, and so weakly that she was obliged to keep her bed the greater part of the day. She was also short-breathed; had palpitation of the heart; and there existed a soft systolic bruit over the valves. The urine was albuminous. The abdomen was enlarged, from the presence of a tumor extending from under the left hypochondriac region nearly to the pubes; it had a flattened surface, and its inner edge occupied the mesian line, and thus clearly, from its position, it was an enlarged spleen. I pricked the arm of the patient, in order to examine the blood, and found the red and white corpuscles in nearly equal proportions. In some parts of the specimen, which was contained on a plate of glass, the white corpuscles exhibited a superiority of numbers.

The patient remained in much the same state until the 2d of May, which was her menstrual period, when a severe hemorrhage occurred from the nose. Previous to this time, she stated that the catamenia had been regular. The bleeding having continued for some hours, and the patient becoming very exhausted, plugging was had recourse to. The menses did not appear. Great anæmia was left in consequence of this attack, and the recovery from it was hardly accomplished, when, on June 2, the hemorrhage again returned from the nose, and plugging was again found necessary. The blood, as well as that obtained from the arm, was in the same condition as when first observed, and that which fell into a vessel coagulated as usual.

On July 4, and August 6, the hemorrhage again occurred, as at the commencement of the previous months, and this consequently produced an increasing weakness and anæmia of the patient. At the commencement of September, she entirely kept her bed, and was in a much more debilitated condition than when she first entered the hospital. The bleeding, which now recurred, was much less than on previous occasions. All other symptoms were the same, including the large amount of colorless corpuscles in the blood, which amounted sometimes to an excess over the red,—the tumor in the abdomen, and the albuminous state of the urine. She was now exceedingly anæmiated and low, but had no dropsy.

During the month of September she daily became weaker, and towards its close, she was evidently fast sinking from exhaustion, and, on October the 1st, she died; but without the occurrence, this time, of any hemorrhage.

Inspection, nineteen hours after death.—The body was thin and pale; there was no anasarca of any part, but a few purple patches existed on the extremities. The lungs, with the exception of a little chalky deposit at one apex, were healthy. The heart was small, pale and flabby. Liver healthy, and gall-bladder full. Pancreas healthy. Kidneys granular, and containing many cysts. The large intestines very much diseased, from old and recent ulceration, and hypertrophy of muscular coats. Cysts in ovaries. The spleen was immensely enlarged, and identical with the tumor in the abdomen observed during life. It was long and narrow, and reached nearly to the inguinal region. My note says—its weight was 2½ lb., but I think it must have been much heavier than this. A section presented nothing remarkable in its appearance, except being more firm and dense than commonly seen, and which made it approach in character to that of liver. The microscope discovered in it nothing more than the usual splenic elements, and thus the enlargement seemed due to a simple hypertrophy of the organ. The blood from all the tissues was everywhere alike, having a large excess of white corpuscles—that of the mesenteric vein being of the same character as the blood from other parts.

CASE 2.—Edward T—, æt. 40, was a shoemaker living in the Borough. He

had resided in the neighborhood for many years, was never in a miasmatic country, and never had ague. His habits were temperate. He had been ailing for about nine months before his admission, but complained of nothing in particular, and for three weeks only had noticed an enlargement of the abdomen. When first seen he was rather spare and sallow, but otherwise in apparent good health, and complained only of debility and a slight cough. On the left side of the abdomen was a hard tumor, smooth on the surface, passing from the left hypochondriac region as far as the anterior spinous process of the ilium, and at its inner edge, reaching to the median line. His arm was pricked, and the blood examined microscopically, when the red and white corpuscles were seen to exist in nearly equal proportions. Subsequent observations exhibited always the same appearances. The man continued in the hospital for two months in much the same condition, having used iodine ointment locally, and every variety of medicine internally, but without any effect in diminishing the size of the tumor. At the end of this period he left, in the same state as on his admission, being not very ill, making no particular complaints, and being able to walk about all day. He has not been heard of since.

ART. 20.—*On Beri-beri.* By DR. MOREHEAD, Professor of Medicine in Grant Medical College.

(*Transactions of the Medical Society of Bombay, 1855.*)

Beri-beri is a term applied to a train of dropsical symptoms, originating, according to Dr. Morehead, in the scorbutic diathesis, under some unusual exposure to cold. There is nothing special in the affection, and therefore no good, and some harm, arises from retaining the special name. This view of the pathology of the disorder, in Dr. Morehead's opinion, is well borne out by the particulars of the development of the disease in a ship's crew, which recently came into the harbor of Bombay, as well as by the state of some of the men who were transferred from the ship to the Jamsetjee Jejeebhoy Hospital, and we quite agree in this opinion. We extract the evidence of the captain of the ship given before the coroner, premising a sketch of the disease in its ordinary form. We have not space for the cases, which, however, contain nothing remarkable:

"The symptoms of this disease sometimes advance gradually; at other times they develop themselves suddenly. When they have been gradual in their approach, the individual for several days experiences a sense of weakness, and inability or unwillingness to exert himself, and shortly afterwards to these symptoms are added pain, numbness, stiffness, with more or less œdema of the lower extremities. There is also more or less dyspnoea experienced, with a sense of oppression and weight at the epigastrium. The œdema does not continue confined to the extremities, but extends to the trunk and face, occasioning a general puffed and bloated appearance. The weakness of the limbs and the dyspnoea are particularly complained of on motion. As the disease advances, the dyspnoea increases, the face becomes more swollen and bloated, and the lips livid. The numbness of the limbs increases to such an extent that they become almost paralytic, the oppression at the epigastrium becomes aggravated, and frequent vomiting is excited, and the ejected matters are sometimes mixed with blood. The urine is scanty and high-colored, sometimes almost suppressed; the thirst is great; the pulse is at first quick and small, or unaffected, then it becomes irregular, intermittent, and fluttering. Palpitations are experienced, attended with a sense of suffocation, a sinking pulse, and death.

"These trains of symptoms may run their course in from two to three weeks; or the course may be much more rapid, and, when so, the numbness, the stiffness, and œdema of the lower extremities, become quickly followed by the dyspnoea, the palpitation, and the sinking pulse.

"Now, what are all these but the symptoms which attend more or less on serous effusion into the connecting areolar tissue of the extremities, the cavity of the abdomen, that of the pleura, the pericardium, or into the air-cells of the lungs, and their connecting areolar tissue—in fact, the symptoms of general dropsy more or less extensive, more or less quickly forming. Dr. Watson, in his excellent lectures, thus writes of dropsy: 'Now, from whatever cause this

watery condition of the whole body may arise, the effects resulting from the presence of the water are the same: and of what do patients in this state usually complain? Why, of shortness of breath and palpitation of the heart, of a sense of impending suffocation if they attempt to lie down or actively to bestir themselves, of tightness and distress across the epigastrium, relieved somewhat by eructation, augmented by food and drink; of weight and stiffness of the limbs, and sometimes of drowsiness.

"Now let us inquire what, in fatal cases of beri-beri, are the morbid appearances found after death. Why, dropsical effusions into the subcutaneous areolar tissue, œdema of the lungs, effusion into the sac of the pleura, into the pericardium, into the peritoneal cavity, and into the cranium. In some cases traces of old or recent inflammatory action of internal viscera may be found; but these form no essential part of the disease."

The evidence of the captain, William Eames, is as follows:

"I am master of the ship *Faize Allum*, of the port of Bombay, and have been constantly commanding, or been chief officer of vessels trading out of Bombay, with a lascar crew, since the year 1838. I last left Bombay on the 3d day of June, 1852, with a lascar crew of sixty-five men and boys; and the deceased, Bhana Moorar, aged about forty years, and deceased Jadow Dewa, aged about twenty-five years, both Hindoos, formed part of the crew. We proceeded from Bombay to Singapore, and from thence to Siam, and returned from thence to Singapore, and so back again to Siam; and from thence to Singapore, which place I quitted for Bombay on the 3d of March this year, expecting to make the voyage in seven weeks, the average passage being about two months. I had on board curry-stuff, rice, water, dall, ghee, salt, &c., as prescribed by the regulations, with a good supply of water; and during such time as the ship was in harbor always supplied the crew with greens, fresh fish, and fresh provisions. The crew all remained healthy till about the 21st day of May last, in latitude 10° N., longitude 64° W. We had then been two months and eighteen days at sea. On the 15th day of April I was within about seventy miles, or thereabouts, of the Island of Ceylon, but being unable to stand the strong current and west winds then blowing, after consulting with my serang and chief officer and passengers, I determined on relinquishing the attempt to get round Ceylon, and bore away for the Line, to come up to Bombay by the southern passage, round the Laccadives and Changos, and ran to the south of the Line as far as 8° 49', and then to the westward as far as 63° W., and crossing the Line again, running north, about the 6th or 7th May, and during most of the time had rain and squalls. Most of the water having been consumed, we filled up the water-casks with rain-water, collected on the surface of a clean awning. After making the Line, on the 6th of May, we had light weather, with occasional squalls and constant rain, and came on with the southwest monsoon up to 16° N. latitude on or about the 2d June, and arrived in the harbor of Bombay on the 6th June. I consider that I first fell in with the southwest monsoon about three degrees north of the Line. The crew were all healthy up to the 21st of May. When in latitude 10° N., longitude 64° W., symptoms of disease first showed themselves. The deceased, Jadow Dewa, complained of pains in his feet, and loss of strength down the legs, and pain in the chest, with difficulty of breathing, and constipated bowels. I gave him jalap and cream of tartar, and, to rub on the chest, hartshorn, laudanum, and sweet oil. The crew, since the 15th of April, had been on a reduced allowance of about ten pounds in ninety pounds of rice—fish and water full allowance, the latter being rain water. Between the 21st day of May and 6th of June, eight other men were seized in the same manner, and all died; the average suffering about four or five days; a Portuguese sepoy died in three days. The deceased, Jadow Dewa, appeared to be recovering fast, and left the ship on the evening of the 6th of June. Bhana Moorar also appeared convalescent, and left the ship in my dingy. All the survivors of the crew are landed, the voyage being completed. The passengers, twelve in number, natives, and myself and officer, and the majority of the crew, are well. We drank the rain-water very freely, and I believe the deceased died of a disease called the *beri-beri* of Ceylon. I had a good medicine-chest on board, and treated those taken ill according to the instructions laid down in

Dr. Thomas's book of medicine. We had no liquor on board the ship. I offered the crew pickles and vinegar, and also sugar, but they refused to eat it. The passengers and myself used pickles, sugar, and vinegar freely, but the crew declined till latterly. The whole number who were attacked were about thirty-five, of whom ten have died. We were in the latitude of Cochin when the disease first appeared, and were about 10° to the westward of the coast of India, with light northwest and northeast winds. The crew were protected from wet as far as possible. The disease attacked persons of all ages, but principally the old and more infirm of the crew. Further I know not. The cargo consisted principally of sugar in bags, of Malling ivory, teakwood, plant and sapan wood, and raw silk. The hatches were kept constantly open when the weather would permit, the fore-castle well cleansed and fumigated with powder burnt and ben-jamin.

"The jury returned the following verdict:—'Deceased died of beri-beri.'"

The cases transferred to the hospital were ordinary cases of the affection. They did not present unequivocal signs of scurvy, but there were decided scorbutic tendencies. There was not time for the full development of these signs in these feeble dropsical people. As to treatment, this must be conducted on general principles, like any other case of dropsy in a scorbutic diathesis.

ART. 21.—*On the removal of metal from the system by Galvanism.* By Dr. G. HUFF, of Lexington, Kentucky.

(*Philadelphia Medical Examiner*, Aug. 1855.)

Dr. Huff relates three cases in illustration of the possibility of employing galvanism as a means of removing metallic substances out of the body, according to the plan proposed by MM. Poey and Vergnès ("Abstract," Number XX.). This plan is very plausible, but it is questionable whether it will gain much weight from the cases which are now adduced in its favor.

CASE 1.—Mrs. W——, æt. 27, of lymphatic temperament, with auburn hair and white skin, had been under treatment for diseased spine fifteen months. During this time she had taken very large quantities of mercury, which (her subsequent medical attendant stated), produced paralysis of the lower extremities.

I was called in consultation by the advice of her physicians, and it was decided that she should be put under treatment by galvanism. Her physicians having thrown upon me the entire responsibility of the case, I took charge of her; and one day, while making an application of this potent agent to the spine, the feet having been placed in a metallic bathing-tub with acidulated water, her husband suddenly called my attention, exclaiming at the same time, "See the mercury!" On making an examination, I found several globules of metallic mercury lying on the bottom of the tub. I continued this (electric) treatment a long time, and she ultimately recovered, and now enjoys the powers of locomotion most perfectly.

CASE 2.—Mr. B——, æt. 40 years, of nervous temperament, with dark hair, white and thin skin, had been treated for syphilis for a long period, and had been repeatedly salivated, from which he had suffered severely in the joints. The capsular ligament was so much elongated as to cause luxation of the head of the femur; separation of the carpus of each hand had taken place, and the metacarpal joints of the fingers were very much enlarged. He had been under treatment of physicians who stood deservedly high in the profession, and had visited warm springs in Arkansas by their advice. At this time he could scarcely move with crutches, even with the help of two attendants which he took with him. He remained there one winter, and returned without having obtained any relief. His friends then advised him to apply to me, and, with the consent of his physicians, he did so. On examination of his case I concluded to treat him, and commenced with warm baths, which invariably left him worse, the joints becoming more stiff and painful, and with less mobility. Believing that the remote cause of this aggravation of his disease was the presence of mercury in his system, I was induced to attempt to extract it. To accomplish this, after having placed him in a porcelain bathing foot-tub, with acidulated water, and a metallic

plate beneath his feet, I completed the circuit, and after the lapse of twenty minutes I discovered a light-white precipitate, and the impress of his toes left on the plate of a light bluish color, with silvery lustre. I repeated this operation several times, and then commenced the galvanic treatment for rheumatism, and infused iodine into the joints, in order to produce absorption of abnormal secretion that had formed there. From this time he commenced to improve, and went on improving without a relapse. All the joints have now recovered their normal condition, with the exception of the left hip-joint, the femur of that side now remaining seven-eighths of an inch below the right, although it has ascended three-eighths of an inch during my treatment; his general health has very much improved; in fact, he says it is now as good as it has been at any period of his life.

CASE 3.—**Mrs. N**—, æt. 28 years, of bilious temperament, small size, hair and eyes black, of a very high order of intellect. At the birth of her second child there was very profuse hemorrhage, and much inflammation of the uterus was superadded in consequence of medicines having been imprudently given by her physicians to facilitate labor. For the purpose of suppressing the hemorrhage and restoring the uterus to a healthy condition, sugar of lead was given in small doses, and its use continued a long time. This treatment resulted in *lead palsy* (the total loss of muscular contraction of the extremities). In order to extract the lead from her system, I commenced the treatment by galvanism in the same manner as in the foregoing case, and with the same results, except that the precipitate was of a dark gray color, and the impress of the toes left on the plate was of a darker hue. When the paralysis was nearly removed, partial amaurosis set in, and ultimately became total. I treated this without benefit, although I think the treatment has not been fully tested, as she was obliged to return home, in consequence of domestic cares, sooner than I anticipated.

ART. 22.—*Supposed case of Ergotism.* By **Mr. THOMAS CAMPS**, of Fenny Stratford. (*Medico-Chir. Review*, July, 1855.)

There is every reason to believe that this was a true case of ergotism. There is, no doubt, some obscurity as to the cause, but there is every presumption that this was the eating of badly harvested corn,—corn which had become diseased by lying long upon the ground before it was reaped; and this presumption is greatly increased by the fact, that the autumn before the time when the disease declared itself, was unusually wet and stormy. This presumption, indeed, is well-nigh converted into a certainty by the collateral evidence, and particularly by the history of a similar disease, which is recorded by Dr. Wollaston and the Rev. J. Bones, in the "*Philosophical Transactions*," for 1762. At any rate, there is no reason to believe that the patient had eaten any rye.

The case is related as follows, the notes showing the resemblance between the symptoms and those of actual ergotism:

CASE.—"James Golding, of Newton Longville, Bucks, laborer, æt. 25 years, about five feet nine inches in height, well formed, with dark brown hair, gray eyes, and, when in health, of florid complexion, had been working in the neighborhood of London since Michaelmas, 1853, and was employed in digging drains for some houses about to be erected. A little after Christmas he was attacked with pneumonia, which, his medical attendant informs me, was severe in character, affecting both lungs, and requiring general and topical bleeding, tartar emetic, and mercury, to subdue it. Whilst improving under this treatment, he imprudently exposed himself to cold. The urine now became albuminous, and the patient's condition in all respects more unfavorable. Shortly after, he was removed by his friends to his native village, and put under my care on the 26th of April, 1854.

"I found him reduced to a state of great debility, much emaciated, and complaining chiefly of difficult breathing, and a sense of exhaustion. The left lung appeared to be extensively hepatized posteriorly, much more so than the right, which also showed well-marked signs of disease. I was unable to detect any morbid sounds in the heart, nor were any observed by such of my medical friends as examined the case. The urine was albuminous, but by no means to

a great extent, and the mouth suffering, though not severely, from the effects of the mercury. The pulse, as might be expected, was feeble. No febrile action was present, and at that time there was nothing to lead me to anticipate the remarkable symptoms about to be developed. As no indication for active medication existed, it appeared the safest plan to watch the patient carefully, but in his present state to pursue only the expectant plan of treatment.

"In the course of ten days or a fortnight after his return home, he began to complain greatly of pain and numbness in the left leg and foot.* A small patch of eruption showed itself on the calf of the leg (much resembling lichen in appearance, except that it was darker in color), very slightly raised above the skin, and not mingled with any vesicles.† There was no heat of surface, though the patient complained of a sense of burning, accompanied with formication; and there was nothing in the appearance of the limb to account for the constant and intense pain, which continued day and night, without being relieved by any form of opiate, though given in large doses. In fact, so completely did opiates fail to mitigate the pain, that they were abandoned as useless. After a few days, the foot and lower part of the leg became cold, nearly void of feeling, and were evidently in a state of approaching gangrene, which soon showed itself unequivocally. The parts became black, and so shrivelled as to give the idea of nothing intervening between the skin and the bones beneath it. At this time, and throughout the greater part of his illness, his extreme aversion to warmth was very remarkable. He complained that heat applied to any part of the body aggravated his pains; and if, on a cold day, any additional covering was laid upon him whilst sleeping, he awakened almost instantly, and threw it off.‡ I generally found him, in the coldest weather, lying in bed with only an old cloak thrown over him.

"When sphacelus had taken place, the affected limb became easier; but about this time the right leg and foot were affected in a precisely similar manner, and, in succession, both hands, the ala of the right nostril, and a small portion of the upper part of the helix of each ear. In the earlier part of these attacks he suffered greatly from spasmodic contraction of the hands and feet, which was not constantly present, though generally returning at short intervals.§ The pulse in frequency differed but little from the standard of health.|| There was no febrile action,¶ except at the time when vesications appeared where the line of demarcation was about to be formed. Though not complaining of the head, the mental powers were evidently much enfeebled. The memory was greatly impaired, and his attendants described him as talking all kinds of nonsense.** As soon as the pains abated, he began to perspire profusely, slept well,†† and had a voracious appetite.‡‡ The bowels continued regular, with the exception of about a fortnight, when he had severe diarrhœa. When signs of approaching gangrene became evident, wine was given, and bark in its different forms, as long as the patient was willing to take it.

"The specific gravity of the urine, which for a considerable time was examined weekly, was 1·011 when he first came under my care, but after a short time it was reduced to 1·006, from which it afterwards varied but little. The color was generally pale, and it was either neutral or faintly acid, depositing little or no sediment. The albumen continued to diminish, till eventually it almost disappeared. From its low specific gravity no sugar could have been anticipated, nor did it at any time show traces of it. At an advanced period of

* Primum symptoma erat torpor erurum, tum dolor cum levi tumore sine inflammatione, et citâ successione, frigus, livor, sphacelus, membri excisio. Tissot's letter: Philosophical Transactions, vol. xlii, part 2. 1762.

† Maculæ in alterius pedibus effluere, pulicum morsibus similes, quæ in octavam hebdomadam perdurant. Quorundam facies turpiter fœdata, est maculis. J. A. Sinc, quoted by Tissot, as above. See, also, a case quoted in the Medical Times, March 4, 1854.

‡ "Dolore interno cruciabantur atrocissimo, qui ex atmosphære aut lecti calore enormiter augebatur." Langius, as quoted by Tissot.

§ "Cette maladie," dit M. Bordot, "commence le plus ordinairement par une sensation incommode aux pieds avec une sorte de titillation, ou de fourmillement dans ces parties. Ces symptômes sont bientôt suivis de contractions violentes spasmodiques des membres," &c.

|| "Pulsus sanorum similis, nullo excepto." J. A. Sinc, as quoted by Tissot.

¶ Langius describes the disease as commencing, "absque ullâ febre."

** "Obliviscuntur se . . . mentis minime compotes." J. A. Sinc.

†† "Sub morbi decursu reliquæ corporis partes satis bene valebant." Langius.

‡‡ "Universa hæc malorum ilias pedesquam habet bulimum." J. A. Sinc.

the disease, the presence of urea was clearly ascertained, though I am unable to say whether this element was normal in amount.

"The eruption, which constitutes an interesting feature of the disease, continued to make its appearance at intervals throughout the attack, till within a month of the present date, Nov. 12th, 1854. It was most abundant on the knees, shoulders, elbows, and the skin covering the lines of the tibia and ulna. The face had many spots on it: they were observed on the nose, the upper part of each ear, and even on the glans penis. Indeed, no part of the body appeared to be wholly exempt from them. The eruption was accompanied with intense itching. Its duration was uncertain; sometimes disappearing in a few days, and at others continuing for many weeks. The spots generally appeared in small patches, varying in form. They differed from petechiæ in color, being of a redder tint, and were slightly elevated above the level of the skin. On dying away, they left in some places merely a dark stain; in others, desquamation of the cuticle took place, or incrustations of a yellow color were formed, adhering for a lengthened period; whilst occasionally, as on the nose and ears, slight sloughing of the parts affected took place.

"No fetor was perceptible from the gangrenous portions of the limbs till their separation commenced. It was then horribly offensive. On this account, after the soft parts of the *left* leg had separated to such an extent as to leave a large portion of the bone exposed, it was thought best to remove the limb at this point. This was done by sawing through the bones close to the granulating surface, which was effected with difficulty, from their extreme density. The walls, where divided by the saw, presented a polished surface resembling ivory. It was found needful to apply lint to the bone, which bled freely. I was not allowed to retain the foot after its removal, but on separating a portion of the posterior tibial artery it was found, contrary to expectation, pervious. The bones of the *right* leg soon after became denuded a little above the ankle, and the foot appeared about to separate at its articulation with the leg, the ligaments being completely exposed. Amputation, in the ordinary method, has always proved fatal in the gangrene of ergotism,* and in the present instance I have no doubt that it would have been so. The poor fellow laid constantly upon his back, with the knees drawn up, and after the *left* leg had been removed he found much difficulty in placing the limb in a different position, nor did the sore go on so well as it had previously done. On this account, the right foot was detached by cutting through the ligaments, leaving about an inch of denuded bone above it. The advantage of this plan of treatment was very obvious. The limb remained in its customary position, and the sore healed rapidly to within a short distance of the projecting bone. With the stump in this state, the removal of the remainder of the bone at a future period will be attended with little risk, should it be deemed expedient. It is worthy of remark, that though the patient has kept his bed for so many months, and during the greater part of the time has lain upon his back, yet no bed-sores have occurred, with the exception of a very small one on the sacrum, which might have taken place in a healthy man confined for as long a time to the same position.

"The condition of this unfortunate being at the present time (November 12th, 1854), is as follows:—His general health appears to be good, and he has evidently gained flesh, eats and sleeps well, and is generally free from pain. The pulse is natural, and no morbid sounds can be detected in the heart. His strength appears to him to be restored, but his mutilated condition forbids him to test the truth of his opinion in this respect. There is no tendency to sweating, and the specific gravity of the urine is 1.017. It has an acid reaction, and shows no traces of albumen. The memory, both as regards recent and more remote events, is still feeble, which has added much to the difficulty of drawing up a connected statement of his case.†

"The small sores on the nose and ears have perfectly healed. The thumb and forefinger of the left hand have separated at the middle of the first phalanges,

* "Quatuor mortui sunt post amputationem, gangrænâ ad truncum usque serpente." Noel, surgeon to the Hôtel Dieu, Orleans. "Amputatio mortem citat." Cl. Salerne, quoted by Tissot.

† "Omnes ægri ab initio fere imbecilli, historiam morbi tradere nesciunt." Salerne, quoted by Tissot.

and the stumps are cicatrized. It is remarkable that, in the right hand also, the thumb has separated, and the forefinger is about to separate, at the same points. The remaining fingers have all been detached at the joint between the first and second phalanges, leaving the former completely denuded for half their length. These subsequently became covered with granulations. Owing to the carelessness of the attendants, the fingers have been allowed to unite at these points. In the left leg, the bones of which were sawn through about seven inches below the tubercle of the tibia, the stump is still far from healed. The sore on the right leg has granulated as low down as the commencement of the epiphysis of the tibia. At this point, separation will probably take place. The flexors of the leg have contracted to such an extent as to render it impossible to straighten them."

Six months afterwards the patient is described as being in perfect health, fat, and florid.

The history of the family related by Dr. Wollaston is very remarkable, and we cannot refrain from copying this also from Mr. Camps' paper, particularly as it is essential to the confirmation of the diagnosis in his own case. The family lived at Wattisham, in Suffolk.

"The husband, wife, and six children were affected with this disease; the eldest being a girl of fifteen, and the youngest an infant of four months old. They were all healthy at the time of the attack. It commenced with severe pain, which, in most of the cases, attacked the left leg first, or as some of them described it, the leg and foot. The pain was so violent, that the whole neighborhood was alarmed by the cries of the sufferers. In the course of a few hours the toes became much swelled, and after four, five, or six days, the pains abated, and the foot began to turn black, appearing at first covered with spots, as though it had been bruised. At this period, in those affected in more than one limb, the other began to be attacked with similar pain. The swelling and discoloration gradually extended upwards, till, finally, the mortified parts separated from the bone, and, after a lengthened period, the bone itself was detached from its connections. All, with a single exception, were affected about the same time, in the month of January, the weather being then warmer than usual. In the case of the father, the disease assumed a milder form, the fingers only becoming discolored and contracted, and the nails of several of them falling off. For a long time afterwards, he continued to complain of darting pains in the legs, hands, arms, and back. One poor girl, attacked in the left foot, stood upon the other for three weeks, leaning against the chimney, till that foot also becoming affected, she took to her bed. During the whole time of this calamity, the family appeared in other respects well. They ate heartily, and slept soundly when the pains abated.

"At the termination of the disease, the father had recovered with the exception of two fingers, which remained in some degree contracted. The mother, aged forty, had lost the right foot at the ankle joint, and the left leg a little below the knee; her hands, and part of her arms, remained with but little sensation, the fingers being also contracted. Mary, aged fifteen, had lost both legs below the knee, and was then dead. Elizabeth, aged thirteen, had also lost both legs below the knee. Sarah, aged ten, was deprived of one foot, and two of the toes of the remaining foot. Robert, aged eight, had both legs off below the knee; and Edward, aged four, had lost both feet at the ankle joints. The infant was weaned as soon as the mother was attacked but became ill, and died in the course of a few weeks. It appeared to suffer violent pain, and the legs became black before death. Dr. Wollaston states that, with the exception of the mother, 'the rest of the family seemed well. One poor boy, in particular, looked as healthy and florid as possible, and was sitting on the bed, quite jolly, and drumming with his stumps.'

"No cause could be assigned for this dire visitation, except that of the family having lived for about a fortnight on bread made from wheat which had been badly harvested. Mr. Bones says, in reference to it—

"This wheat they have bought of the farmer whom I lodge with, who tells me, that last year he had some wheat *laid*, which he gathered and threshed separately lest it should spoil his samples. Not that it was mill-dewed, or grown,

but only discolored, and smaller than the other. This damaged wheat he threshed last Christmas, and then this poor family used no bread but what was made of it, as likewise did the farmer's own family, and some others in the neighborhood. A laboring man of the parish, who had used this bread, was affected with a numbness in both his hands for about four weeks from the 9th of January. His hands were continually cold, and his finger-ends peeled. One thumb, he says, still remains without any sensation.'

"Dr. Wollaston also says that the corn alluded to was very bad. 'It was wheat that had been cut in a rainy season, and had laid on the ground till many of the grains were black and totally decayed.'"

ART. 23.—*Case of Scleroma.* By Dr. ROBERT M'DONNELL.

(*Dublin Hospital Gazette*, Feb. 1, 1855.)

This peculiar pachydermatous affection is but rarely met with in adults. It was described about ten years ago by M. Thirial, and since this time a few cases have been put on record. Dr. M'Donnell refers to two of these cases in his paper.

CASE.—"Mary Connell, a strong, robust-looking country girl, æt. 28 years, appeared among the patients at the Talbot Dispensary, August 11, 1854.

"She complains of a hardness and rigidity of the skin over a great part of the body. Her appearance is peculiar. The skin of the face seems tightened and shining; there is a want of the power of expression in the countenance, the integument of which is so rigid as not to admit of the free movements of the brow and around the eyes and mouth, which are essential to an expressive countenance. She smiles or laughs with difficulty. As she says herself her face feels stiff, as if it were coated with varnish or starch. The skin covering the neck, chest, shoulders, and arms, is in a similar hard and rigid condition; it feels not unlike the skin on a slice of bacon. The mammae are firm, and like brawn; the calves of the legs have a hardness like phlegmasia dolens. The abdomen and thighs are comparatively free from induration, with the exception of a patch the size of one's hand above the right knee. The skin looks quite natural, except on the face, where it seems tense and shining, and browned, as if by exposure to the weather; it cannot be pinched up nor even moved with freedom over the subcutaneous structures; this is the most remarkable around the eyes, where the cellular tissue is in general lax. The peculiar rigidity seems to be seated in the subcutaneous cellular tissue, but does not depend on œdematous infiltration of it. There is no pitting upon pressure. The patient states that her general health has been and still is very good; pulse (which is not very readily distinguishable at the wrist through the indurated integument) 80; heart's sounds normal, and very distinctly audible; urine apparently normal, and not albuminous; no derangement of the menstrual functions. She complains of chilliness over the surface of the body, especially in the extremities; but, with this exception, she suffers from nothing more than '*stiffness of her skin*,' and slight loss of flesh.

"The complaint originated twelve months ago. It commenced in the neck and arms, and gradually spread to the other parts affected; for the last two months it has not become worse; the free motion of the joints is, to a slight extent, impaired; the wrists and ankles less stiff than the other joints. She does not suffer from globus hystericus, or other hysterical affections.

"She was under treatment for more than a month, during which time she took bark and hydriodate of potass, and made use of a liniment of glycerine, distilled water, and hydrocyanic acid. Baths and unctuous liniments were also tried, but nothing seemed to be of the least benefit; and she ceased to attend at the dispensary December 17th, 1854."

SECT. II.—SPECIAL QUESTIONS IN MEDICINE. •

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 24.—*Cases illustrating the Pathology of Mania and Dementia.* By Dr. A. J. SUTHERLAND, Physician to St. Luke's Hospital.

In this paper, which was read before the Royal Medical and Chirurgical Society, the amount of mixed phosphates in the urine is compared with the analyses of the brain and blood, and with the symptoms in cases of mania and dementia. The conclusions are based upon analyses of the urine, performed by Dr. Beale, in five cases of acute mania with paroxysms, four cases of common mania, two of intermittent mania, one of remittent mania, two of hysterical mania, three of puerperal mania, five of acute dementia, one of acute dementia with catalepsy, five of paralysis of the insane, three of chronic mania, and three of chronic dementia, making in all thirty-four cases. These results are compared with the analyses of the blood and brain by L'Heritier, Couerbe, Hittorf, and Michea.

The conclusions drawn from the observations are—

1st. That a plus quantity of phosphates exists in the urine in the paroxysms of acute mania.

2dly. A minus quantity exists in the stage of exhaustion in mania and in acute dementia, and in the dementia of paralysis of the insane.

3dly. The plus and minus quantities of phosphates in the urine correspond with the quantitative analysis of the brain and blood; for a plus quantity of phosphates is found, and a slight excess of albumen in the blood of maniacal patients, and a minus quantity of phosphorus and albumen are found in the brains of idiots, and a minus quantity of albumen in the blood in paralysis of the insane.

4thly. The plus quantity of phosphates in the urine in cases of acute mania denotes the expenditure of nervous force, and is not a proof of inflammation in this disease.

ART. 25.—*On Meningitis in the Adult.* By Dr. J. LEWIS SMITH, Physician to the Northwestern Dispensary, New York.

(*New York Journal of Medicine*, March, 1855.)

This paper is an analysis of twenty-one cases of meningitis in the adult—this being the entire number of unequivocal cases (cases, that is to say, which presented after death a lymphic deposit on or under the membranes), which the author has been able to collect from various sources. In some of these cases the inflammation was primary, in others secondary, but when secondary the symptoms of the primary disease were not such as to produce any material modification in the inflammatory symptoms. The result of the analysis is to show a considerable difference between the symptoms of meningitis in the adult and meningitis in the child.

"*Symptoms.*—Headache was one of the most common, generally severe, but sometimes slight. It is recorded in fourteen cases, in all of which it began the first day, and continued till the patients sank into delirium or coma. In no case is its absence recorded.

"One only had convulsions. This man was a soldier in the French army at the time of its retreat from Moscow, subsequently to which he was subject to epileptic attacks. An autopsy of all the viscera showed no disease except the meningitis.

"How the opinion has become so prevalent, that inflammation of the meninges gives rise to convulsions I do not know, but presume it is because this disease is most common in childhood, and convulsions usually attend this as well as other encephalic diseases in early life. Perhaps English and American physicians have derived their knowledge of diseases of the brain and membranes more from Abercrombie's treatise than any other source; and, as we have said, nearly all the cases in his collection were children. He gives the opinion that 'the more common form in which the attack takes place, is by a sudden and

long-continued paroxysm of convulsions,' alluding to an attack of meningitis. On the contrary, our analysis clearly shows that convulsions are not a symptom of this disease except in childhood, and this correction should be made in our standard works.

"A rigid and flexed state of the upper extremities was present in one case, in one trismus, in another paralysis of one side of the face, in another of an arm, and in four of an entire side.

"Delirium was noticed in fourteen cases; in three coming on in the commencement of the disease, in the others not till near the close of life. It is not stated whether the remaining seven were delirious, so that if this symptom were present, it was probably of the passive kind.

"Vomiting, so common in the acute hydrocephalus of childhood, occurring in only six cases, and in these, with one exception, not till the disease was well advanced.

"The pupil in six cases was dilated during the comatose state, and in two others, before the development of coma, it was contracted, the condition during coma not being mentioned. Besides these, four exhibited some unnatural appearance of the eye, as strabismus, occurring probably from effusion. In the remaining cases the condition of this organ is not recorded. In one instance where the pupils were dilated, thirty leeches were applied to the neck, and while the bites were still bleeding contraction took place. This goes to show that simple congestion may cause dilation, which may not, therefore, be always so grave a symptom as is usually thought.

"Retention of urine was present in six cases, and incontinence in one.

"The pulse in seven was under eighty till near the close of life. Of these, three were phthisical, two had headache for two years, and one for life, one had pain for a considerable time in the lumbar region, the cause not being apparent, and in the other the inflammation appeared to be primary. Three had a pulse varying from 80 to 100, two were phthisical, in the other the inflammation was primary. Three had a pulse over 100, of whom two were consumptives. The thought may occur, whether this discrepancy in the condition of the pulse may not have been due to compression from the effused fluid. A compressed state of the brain will, in many instances, prevent acceleration of the pulse, though the inflammation is intense. But this explanation does not answer, for the symptoms of compression were generally absent till near the close of life. It is better to consider this diversity due to a difference in the grade of inflammation, as is the case in the inflammation of other serous membranes.

"The mode of death in sixteen cases is given, in all by coma, varying from a few hours to two or three days. Generally the effusion of serum and lymph seemed sufficient to cause the coma.

"The seat of inflammation in seven cases was the base of the brain, in four the convexity of one hemisphere, in three the upper surface of both, and in two the entire meninges. In the remaining case the seat of disease was not recorded accurately, though the deposit showed undoubted inflammation.

"From this analysis the following conclusions may be drawn:—

"1st. That a common cause of meningitis is the tubercular diathesis.

"2d. That if in any of these cases the inflammation was primary, and not dependent on a diathesis, it did not differ materially from the secondary form either in gravity or duration.

"3d. The meningitis usually commences with headache.

"4th. That convulsions are not a symptom of it.

"5th. That delirium is presented in the majority of cases, occasionally early, but generally not till the disease is far advanced.

"6th. Vomiting does not occur till a late stage of the inflammation, and then in only a moderate number of cases.

"7th. The pulse differs in different cases, and is, therefore, the less reliable as a means of diagnosis.

"8th. Paralysis sometimes occurs at a late stage of the disease, but generally there is no contraction or rigidity of the limbs.

"9th. That the mode of death is by coma.

ART. 26.—*On the nature and treatment of the cerebral symptoms occurring in Albuminuria.* By M. MARCHAL (de Calvi).

(*Gazette des Hôpitaux*; and *Dublin Hospital Gazette*, Sept. 15, 1855.)

The object of this communication is to show that these symptoms are the result of serous effusion either into the arachnoid sac, or into the subarachnoid cellular network, and not of uræmia, as has been supposed by *Frerichs* and many others. Hence, the author is of opinion, that there is much danger in the use of hot or of vapor baths in albuminous anasarca. He thus states what he calls "his doctrine:"—"When the albumen of the blood is escaping with the urine, whether in cases of pregnancy, or as the result of a chill to the surface, or after one of the exanthemata, especially scarlatina, or lastly, as in 'granular disease' of the kidney, the serum is apt to exude from the capillary vessels, the albumen being the bond of union between it and the rest of the blood; hence, dropsies arise. Under these circumstances, if owing to any exciting cause, as a vapor bath, for example, or independently of this, owing to some idiosyncrasy, there be a determination of blood to the head, there will then be produced 'cerebral symptoms' of the convulsive, or comato-convulsive class."

The following case is given in illustration:

CASE 1.—"A *gendarme*, of robust health, with the exception of being slightly rheumatic, became suddenly chilled after having been in a perspiration. Next day he was admitted into the *Val de Grâce*, laboring under general anasarca; the urine was excessively albuminous; after being purged he seemed to be better. For the two next days, in accordance with the general advice of authors, he was given a vapor bath, when he was attacked with pain in the head, then with epileptic fits, in the ninth of which he died.

Autopsy.—"There was extreme hyperæmia of the kidneys, and pus was found in the parenchyma of the organ and in the pelvis. The brain was excessively congested, and there also existed serous infiltration of the subarachnoid cellular tissue."

A second example is then given, to illustrate further the danger of hot baths in such cases:

CASE 2,—was that of a young lady who was affected with albuminous anasarca during her pregnancy. She was very anæmic, and greatly enfeebled. At three months she miscarried. When consulted, M. Marchal examined the heart; it was healthy; the urine was albuminous, but only slightly so. He considered the dropsy was now chiefly owing to the extreme debility of the patient, and ordered iron, &c., whilst the albuminous drinks, sweetened with sugar and eggs, were given to try and repair the loss of albumen in the blood. The patient was better, and had been able to go out to drive, when the ordinary medical attendant thought of giving baths to remove the dropsical effusions. The patient took three baths. Each time her face was a good deal flushed; after the third she suddenly lost her sight, and her speech became difficult, though her mind was unaffected. In a few days she died. There was no examination of the body.

ART. 27.—*On the differential signs of Cerebral Hemorrhage and Cerebral Softening.* By Professor TROUSSEAU.

(*Rév. Méd. Chir. de Paris*. May, 1855.)

On a recent occasion M. Trousseau made the case of a female patient, then in the Hôtel Dieu, the text for some practical remarks upon this subject. The case was this. The power of motion in one side was lost, and especially in the arm, but the intelligence and sensibility were unaffected. These symptoms had happened suddenly, and without any warning, a month previously. The patient had gone to bed, as she supposed, quite well, but in the morning she awoke with the arm benumbed. This was just before the menstrual period. For this symptom she caused herself to be bled, and during the bleeding the paralysis extended to the whole side. From this time until the next menstrual epoch she

went on improving, but at this time she was again struck suddenly with complete paralysis of the same side. At this time she was immediately brought into the hospital.

What, then, was the nature of the case? The fact that both attacks had occurred at the time when the menstrual epoch was about to commence, and that they were sudden, and without any preliminary threatenings, suggested the idea of cerebral hemorrhage: but it might be softening. M. Trousseau inclined to the latter belief, but he did not venture to express a positive opinion.

Presently the patient died, and the inspection showed that M. Trousseau's suspicions were correct. There was decided softening in the brain, but no trace of hemorrhage.

The remarks upon the case are of considerable practical value. According to current opinion, cerebral softening cannot be confounded with cerebral hemorrhage. It is a hemorrhage, we are told, when a person, without experiencing any precursory symptoms, is suddenly struck with hemiplegia, when he is suffering from loss of sensibility or consciousness. On the contrary, it is softening when (after various precursory signs of a convulsive and spasmodic character) the paralysis is developed gradually.

This, however, is not a constant rule. It is the rule, but there are exceptions. Hemorrhage may be preceded by warnings, and softening may declare itself suddenly. How, then, are these exceptional cases to be distinguished? Recamier gives the rule, and the rule is this: In hemorrhage there is agreement (consonance) in the symptoms, that is, the three manifestations of cerebral activity, intelligence, sensibility, and the power of motion, are simultaneously affected; in softening there is disagreement (dissonance) in the symptoms—that is, the power of motion is affected without any corresponding affection in the intelligence and sensibility.

According to this diagnostic law, then, the patient under consideration was attacked with softening, and not with hemorrhage, because her intelligence and sensibility were unaffected; and the result, so far as it goes, proves the correctness of the law. At the same time it was natural to suspect hemorrhage in a case where the symptoms occurred so suddenly, and at the time, moreover, when the menstrual flow was about to commence.

ART. 28.—*Case of softening of the Cerebellum.* By Mr. ROBERT BIANCHI.

(*Lancet*, Feb. 24, 1855.)

In this case there was partial loss of muscular power in the lower extremities, and marked excitement of the sexual function.

CASE.—W. R.—, æt. 65, was formerly a porter in the Borough Market. During his occupation he used to drink to a great extent, and was altogether irregular in his habits. Between fourteen and fifteen years ago he became an inmate of St. Saviour's Union Workhouse, having been compelled to leave his employment on account of a gradual loss of muscular power in his lower extremities. Since his admission into the workhouse, various remedies (amongst them strychnia and electricity) have been tried, without the slightest benefit; and although he did not get worse, still there was no improvement. He has always been able to walk about by means of a stick, but if he attempted to hurry, directly fell down. When spoken to quickly, his legs would start, and remain in a state of agitation some minutes. About seven months ago he began to have incontinence of urine, and since that period has almost entirely remained in the same ward. He went to bed, no alteration being noticed by the other inmates of the ward in his state of health, and was found dead in the morning. Whilst living in the workhouse, his extreme partiality to the female sex has been remarked, and also that he was constantly addicted to masturbation. (These facts I have ascertained since making the post-mortem examination; and also that his wife had not lived with him for two years, while he was able to get his own living, on account of his want of constancy.)

Post-mortem Examination, fourteen hours after death.—The body generally was rather emaciated, the scrotum and thighs excoriated, and the testicles extremely small; both lower extremities much wasted. The cerebrum, after a very careful

examination; appeared quite healthy. On attempting to remove the cerebellum, I found it impossible to do so, the whole substance breaking down on touching it, although before attempting its removal the proper form was preserved, and the gray matter was still distinguishable from the white. The medulla oblongata was quite healthy. On examining the chest, I found a large abscess in the right lung, but could not trace any bronchial tubes into it, which would account for its not presenting itself as a symptom during life. The left lung was perfectly healthy. The heart was a good deal encumbered with fat: the liver in a state of cirrhosis; the kidneys showed granular degeneration. There was thickening of the bladder generally; and a small abscess had formed by the side of the rectum.

ART. 29.—On the diagnosis of Tumors within the Cranium. By Dr. FREIDREICH.

(*Beiträge zur Lehre von dem Geschwulsten innerhalb der Schädelhöhle, Würzburg, 1853; and Edinburgh Monthly Journal, March, 1855.*)

Dr. Freidreich has recently published a very interesting monograph on this subject, containing the particulars of forty-five cases of intracranial tumors, eleven of which were observed by himself; and on these he has founded some valuable remarks as to the mode of their diagnosis. The following is a brief resumé of his observations on these points.

1st. *The General Effects of Intracranial Tumors.*—Various derangements of sensibility occur. One of the most constant of these is *headache*, which is especially frequent in the early stages of the disease. The cephalalgia is remarkable for its persistence and intensity; it may be either continuous or intermittent; and it may be accompanied by *vertigo* and *vomiting*. Its side does not always indicate the place of the new growth. The organs of special sense may be affected; the *sight* becomes impaired on one or both sides; there may be *strabismus*; and the *hearing* generally suffers more or less. The minor grades of *paralysis* are common. The length of interval between the initiatory headache, and the occurrence of the paralysis constitutes the most characteristic mark of these intracranial tumors. *Convulsions* and *spasmodic conditions* occur in one half of all cases; and the former often assume an epileptic type. The *mind* is always more or less affected; its diseased condition generally commencing with *loss of memory*.

All these symptoms are very inconstant and variable; they are also liable to alternate remissions and exacerbations, which probably are due to the occurrence of transitory congestions either of the tumor, or the cerebral substance, or perhaps of both together. The course of intracranial tumors is always chronic. Friedreich never knew a case to be shorter in duration than six weeks, or longer than fourteen years.

2d. *The Special or Differential Diagnosis of Intracranial Tumors.**—(a.) Those situated in the *cerebral hemispheres* (18) are generally accompanied by obstinate headache (14); nausea and vomiting (9); by derangements of the motory functions (14); consisting of more or less extensive paralysis, and of convulsions which assume an epileptiform character. When hemiplegia occurs it is sometimes crossed (*gekreuzt*), and sometimes not; but it constantly occurs on the affected side. Derangements of the special senses are common (10), especially of sight (7); and intelligence is often impaired (11). In a few exceptional cases there are no headache or alterations of the motor functions.

(b.) *Tumors of the base of the cranium in the neighborhood of the pons*, occasion the following symptoms:—(9) headache, (8) almost always frontal; impairment of vision (7), commonly also of hearing and taste (5), and in some cases (3) of smell. All these symptoms, due to loss of power of the facial nerves, occur on the same side as the tumor; but paralysis of the extremities, when it occurs, affects the opposite side of the body. Complete hemiplegia and paraplegia are not very common; and convulsions occur less frequently than with the former class of tumors, and are not epileptiform. An important sign of these tumors is afforded by great multiplicity of the existing sensorial disturbances, and the tendency of the optical derangement to become bilateral. The mind is sometimes affected (5).

* The numbers placed above in brackets refer to the number of cases, among those examined by Friedreich, in which the particular symptoms were present.

3d. *Tumors of the Pituitary Region.*—Friedreich only saw one case of this. There was frequent frontal headache, often with pain in the orbit; and double amaurosis. There is rarely any disturbance of the motor functions.

4th. *Tumors of the anterior part of the Base of the Brain.*—Two cases were examined. The symptoms resemble those just mentioned.

5th. *Tumors of the Peduncles of the Cerebrum and Cerebellum.*—Paralysis of the face and extremities, occurring on the side opposite to that on which the tumor was situated, was observed in three cases. This makes tumors thus situated, resemble those of the hemispheres. Complicated derangement of the nerves of special sense and of the face (as the oculo-motor and trifacial), were seen in two cases. This, on the other hand, approximates these tumors to those of the base.

(f). *Tumors of the Cerebellum* (8) had the following signs:—Violent cephalalgia (7), often intermittent, and combined with vomiting (4); and situated in the occipital region (4). Occipital headache may be considered to be pathognomonic here, as it occurs in the case of no other intracranial tumors. Pain at the nape of the neck, increased by pressure, may exist. In one case there were no peculiar symptoms; and in none of the cases of tumors of the cerebellum were the generative functions at all affected.

(g.) *Tumors of complex situation.*—Correct diagnosis is here impossible.

ART. 30.—1. *On the condition of the Muscles in Hemiplegia.* By DR. J. RUSSELL REYNOLDS. With some comments by DR. MARSHALL HALL, F.R.S.

(*Lancet*, Sept. 8-22, 1855.)

In our opinion, Dr. Reynolds appears to make out his case very well in this very interesting and valuable paper. This, however, is not Dr. Marshall Hall's opinion, as the criticism which we append will show.

(A.) Three different statements being on record with regard to the irritability of muscles paralyzed in consequence of cerebral lesion, Dr. Reynolds has made a series of observations, in order, if possible, to solve the following questions:—

1. Do the paralyzed muscles differ in irritability from those of the healthy side?
2. If differing, what is the nature of that difference?
3. Are the alterations observed of the same kind in all cases, or are they variable?
4. If variable, can they be referred to appreciable conditions of the limbs in question, such as the state of nutrition, of contraction, &c.?
5. Or are they referable to variations in the mode of experimenting?
6. Have the conditions of irritability any, and what, value in pathology and diagnosis?

"Through the ready kindness of my friend Mr. William Filliter, I have been permitted to examine these questions in the cases of twenty hemiplegic patients under his care in the St. Marylebone Infirmary; and I am also indebted to Mr. Filliter for most valuable assistance in the prosecution of the inquiry.

I. The cases examined are twenty in number, and are all examples of hemiplegia, differing in the amount and duration of paralysis, and also in the conditions (of contraction, nutrition, &c.), with which the paralysis is associated. These points are related in every case, but in this paper a summary of them will alone be given.

II. The mode of examination has been the same in each instance, the tests for irritability being of two kinds—percussion and the galvanic current.

1. *Percussion.*—This is an exceedingly ready test of irritability, and the differences observed between the healthy and paralyzed limbs, in obedience to its application, are most obvious in the greater number of cases. Very little force is required, a gentle tap over the belly of a muscle being sufficient to elicit marked contraction. The muscles have been examined in groups—viz, the flexors and extensors of the forearm, hand and fingers. Each group has been compared with its corresponding group on the healthy side, and care has been taken to

avoid confusion with reflex spasms by observing the results of pinching the skin, or percussing it over a bone.

2. *Galvanism*.—The galvanic current has been applied by means of a Cruikshank's battery of 50 plates, each being rather less than two inches square. The exciting fluid employed consisted of dilute nitro-sulphuric acid, in the proportion of one in sixteen parts. The mode of applying the current was as follows:—*a*. The feet of the patient were placed in one basin of water, and the hands in another, a wire from the battery, terminating in a copper-plate, being connected with each basin. The order of observation was the following:—First, the current was directed from the feet to the arms—i.e., the "direct" current (as Matteucci termed it, or that current which takes the course of the motor nerves, from the trunk towards the extremities) was observed, and contrasted in the arms. Each arm was examined separately—i.e., placed in the basin by itself, in order to ascertain the lowest number of plates which would cause an appreciable contraction of the muscles. Then the two hands were immersed equally in the water, and a similar observation made as to the lowest number of plates causing contraction in each, and as to the relative force of the contractions in the two arms, with low and high powers. Secondly, the order of the currents was inverted, and a similar series of observations made, with the current "inverse" or "indirect" (to the motor nerves) in the arms. *b*. A second series of observations were made with the current directed from arm to arm—i.e., direct in one and inverse in the other. These several observations were recorded at the time, and the degree of irritability of the two sides, judged of from the number of plates required to induce contraction, and the relative distinctness and force of that contraction.

It was, at all times, endeavored to place the two sides in perfectly correspondent condition; and in order to estimate the amount of variation which might follow from an unequal immersion of the hands or feet, experiments were made upon a healthy adult; the result of which was that such inequalities as might have occurred were altogether inconsiderable; for, when intentionally exaggerated to the highest point, the differences produced did not amount to more than that of one plate.

III. Results of examination.

1. Those obtained by percussion:

No difference between the two sides in	6 cases.
Paralysed side the more irritable in	14 "

Of these 14 cases, 3 presented slight contraction of the muscles (upon percussion) on the healthy side; in the remaining 11 there was none. In 5 cases, the difference between the two sides was very considerable, the irritability on the paralyzed side being notably increased. Of the first 6 cases the two sides were equally unaffected by percussion.

2. Results obtained by galvanism:

No difference between the sides in	2 cases.
Healthy side the more irritable in	13 "
Paralyzed " " "	5 "

In no one case was the irritability extinct; and it is extremely curious to observe that the same cases presented marked differences in respect of irritability as tested by the two methods. In order to answer the fourth question proposed at the commencement of this paper, the three groups of cases, separated by the results of galvanic examination, will now be compared.

First. *The 18 cases exhibiting a diminished irritability on the paralysed side.*—Of these, 8 were males, and 5 were females. The paralysis affected the right side in 5, the left side in 8.

The duration of paralysis was—

From two to nine months in	4 cases.
" one to three years in	6 "
" three to four years in	1 "
Above ten years in	2 "

The amount and extent of paralysis were as follows:

	Fingers.	Wrist.	Forearm.	Arm.
Completely immovable in	10	9	7	3 cases.
Partially movable in	3	4	6	11 "

Tonic contraction of the flexor muscles was observed to be distributed thus :

	Fingers.	Wrist.	Elbow.	Shoulder.
Absent in	2	3	2	7 cases.
Slight in	1	1	4	4 "
High marked in	10	9	7	2 "

The sensibility of the paralyzed limbs was—

Normal in	6 cases.
Diminished in	3 "
Exalted in	1 "
Not examined (not recorded) in	3 "

Nutrition of the muscles (judged of by their size, their firmness, and the appreciable temperature of the limb) exhibited the following variations :

Normal condition in	7 cases.
Slight wasting in	4 "
Considerable wasting in	2 "

The results obtained by percussion were that—

The paralyzed limb was unaffected in	4 cases.
" " the more irritable in	9 "
And of these 9, very highly irritable in	4 "

Secondly. *The 5 cases exhibiting a relative increase of irritability on the paralyzed side.*—Of these, 4 were males. The paralysis was situated on the right side in 3, on the left in 2.

The duration of the paralysis was—

From one to five months in	2 cases.
" three to eleven years in	2 "
Many years in	1 "

The degree and distribution of paralysis were as follows :

	Fingers.	Wrist.	Forearm.	Arm.
Completely immovable in	4	4	2	0 cases.
Partially movable in	1	1	3	5 "

Tonic contraction existed in some cases, and was absent in others, thus :

	Fingers.	Wrist.	Elbow.	Shoulder.
Absent in	2	2	1	3 cases.
Slightly in	1	1	1	1 "
Highly marked in	2	2	3	1 "

Sensibility was normal in 2 cases, diminished in 3. Nutrition was normal in 4 cases, whereas slight wasting was observed in 1.

The results obtained by percussion were that—

The paralyzed limb was unaffected in	1 case.
" " the more irritable in	4 cases.
And of these 4 cases, highly irritable in	1 case.

Thirdly. *The 2 cases exhibiting no difference between the sides.*—Both were women. The paralysis affected the right side in each; and had existed for many years. There was complete loss of motility in one, incomplete in the other. Contraction was slight in each. The muscles were wasted in one case; nutrition was normal in the other. Sensibility normal in both. Percussion elicited no contraction in one; but distinct irritability in the other.

IV. *Conclusions.*—From these observations we may take the following inferences in reply to the questions stated at the outset :

I. That in some cases of hemiplegia, but that not in all, the paralyzed limbs do differ in irritability from those of the healthy side.

Hence, 1. That hemiplegia (cerebral paralysis), *per se*, does not necessarily involve any change.

2. That such changes as may occur are due to subsequent, or coexistent, but additional morbid processes.

II. That the differences observed are in the degree of irritability.

III. That these differences are not constant; in some cases being those of excess, in others those of deficiency.

Hence, that the processes which affect the irritability of the muscles in hemiplegia are of different kinds.

IV. That the variations observed cannot be referred to either the sex of the patient, the side affected, the amount or duration of paralysis, to changes of sensibility or nutrition, or to the coexistence of tonic contraction.

V. That all the differences observed cannot be referred to variations in the mode of experimenting; since, in all the cases here recorded, the mode of examination was precisely similar.

With regard to this fifth conclusion it may be remarked, that during the course of these experiments certain observations were made which illustrate two possible sources of fallacy. (1.) In every case the direct current was considerably more energetic than the indirect (a fact previously stated by Matteucci); and, in some instances, the difference between them was greater than that between the irritability of the two sides. When this was the case, the direction of the current determined the side in which the more energetic contraction should occur. This source of fallacy affected only the second series of observations (b); but it was observed in both classes of cases, and could be readily rectified by the first series of experiments (a). (2.) It was observed in several cases where the irritability was in excess on the paralyzed side, as tested by the low power, that a higher force induced more energetic contractions on the non-paralyzed side. This illustrates Dr. M. Hall's statement, that the former is alone a test of *irritability*; the latter, an index of *contractile power*; and this appears to have been overlooked by some observers.

VI. That the pathological inferences are somewhat complicated, and their relation to diagnosis of negative character.

a. With regard to pathology, these experiments show—

1. That we may distinguish between the nervous and muscular irritability of hemiplegic limbs. This appears to be warranted by the different results of galvanism and percussion. The phenomenon, contraction, is the same in each instance, and there is every reason to believe that it is in all instances the special property of the living muscle. What is different is the mode of stimulation. It is generally admitted that percussion acts immediately upon the muscle itself; whereas the differences observed between the effects of the direct and indirect galvanic current, and the notable want of conformity between the galvanic and percussion experiments, render it evident that the former present something different from, or in addition to, the state of muscular irritability, and make it probable that (as Dr. Todd suggested) "the excitability of the paralyzed muscles to galvanism varies with the condition of their nerves more than with that of the muscles themselves."*

2. That the muscular and nervous irritability are affected in different directions; the one being increased and the other diminished in the same cases.

3. That, as a rule, the nervous (galvanic) irritability is diminished. This occurred in 13 of 20 cases, and the conclusion is in accordance with that of Dr. Todd. At the same time the observations recorded are at variance with Dr. Todd's mode of accounting for the fact—viz., that "the contractility or irritability of paralyzed limbs bears a direct relation to their state of nutrition."

4. That in some cases the nervous irritability is increased. This conclusion, warranted by 5 of 20 cases, is in accordance with that of Dr. Marshall Hall; but the existence of a larger number of cases presenting the opposite condition indicates that Dr. Hall's statement is not universally correct.

5. That in rare cases the nervous irritability is unchanged. This condition was noticed in two cases only; but, according to M. Duchenne, it is that which may be most frequently observed.† With regard to M. Duchenne's statement, it may be remarked, that although the existence of these two cases indicates that hemiplegia *per se* does not necessarily involve any change in the condition of electric irritability, yet that the absence of some change is the exception and not the rule.

6. That in the majority of cases the muscular (percussion) irritability is augmented in hemiplegia. This conclusion, warranted by 14 of 20 cases—i.e. by

* Medico-Chirurgical Transactions, vol. xxx. p. 227.

† Traité de l'Électrisation Localisée, Bull. Gén. de Ther. t. xvi, p. 340.

all which exhibited any change from the normal condition, is in accordance with the general proposition of Dr. Marshall Hall, who was the first to invite attention to the subject. But the galvanic observations, if correctly interpreted, are at variance with Dr. Hall's explanation of the phenomena—viz., "that the spinal marrow is the special source of the power in the nerves of exciting contraction, and of the irritability of the muscular fibre."^{*}

7. That in some cases (6 of 20) there is no evidence of increased muscular irritability.

8. That in all cases in which the muscular irritability was found increased, the augmentation (being on the paralyzed side) was constantly associated with diminished volitional power; but, on the other hand, the loss or diminution of volitional power does not necessarily induce any increase of muscular irritability.

9. That the existence of increased muscular irritability may be, but is not necessarily, associated with the augmentation of nervous excitability.

10. That the alterations of muscular irritability are not referable to conditions of nutrition, to the presence or absence of tonic contraction, to the state of reflex excitability, or to the amount or duration of paralysis.

b. With regard to diagnosis, it may be concluded—

1. That no positive change of irritability must be expected as a means of distinguishing cerebral from spinal paralysis; but

2. That the negative evidence afforded by the absence of notably diminished irritability may be of service in diagnosing paralysis which results from exclusion of the cerebrum only, from that which is owing to exclusion of the spinal cord.

(B.) In commenting upon these statements, Dr. Hall says: Whenever I have repeated my experiments on the condition of the irritability of the muscular fibre in paralytic limbs, on a considerable number of patients, I have met with *exceptional* cases. This fact I have recorded on several occasions.

I noticed this event again particularly on my last trials at the St. Marylebone Infirmary in 1854. I called Dr. Reynolds' attention to the fact, and begged him to investigate the subject, and I think the profession greatly indebted to him for the deeply interesting results communicated in the "Lancet" of the 8th instant.

I think all who have experimented on this subject have agreed in *one* conclusion: *the irritability is diminished in spinal paralysis*, or that paralysis which, from whatever cause (such is my definition of the term), excludes the influence of the spinal marrow.

It is in regard to cerebral paralysis that the difference of opinion has existed. I, with the exceptional cases to which I have alluded, and which I myself discovered, have found the *irritability* in this case *augmented*, comparatively, at least, with that of the other limb, if not positively; I believe the latter, though *not* in the *degree* in which it is diminished in the other form of paralysis.

The interesting question is—What is the explanation of the exceptional fact? For Le Gallois has a beautiful paragraph—

"However opposed results may appear, we must remember, that of two facts, both well established, one can never exclude the other, and that the apparent contradiction depends on some intermediate element which has escaped us."

What is the "intermediate element" in regard to the question before us, in regard to which there is, as in all such cases, if the inquiry be pursued, a *discovery* to be made?

I believe I have made that discovery.

It consists in the fact, that all cases of *hemiplegia* are *not* cases of *cerebral paralysis*.

These are not convertible terms. The very title, therefore, of Dr. Reynolds' admirable paper is objectionable. Cerebral paralysis is *one* thing; hemiplegia, *two* or more.

For example: In a severe case of hemiplegia we meet with *two* series of phenomena. The first consists in paralysis of volition in the arm and leg of the side opposite to that of the lesion; this is *cerebral* paralysis. But there is a second. There are frequently stertor and dysphagia; these are symptoms of

* Medico-Chirurgical Transactions, vol. xxii, p. 206.

spinal paralysis. Further, the arm and leg themselves are sometimes so affected by *spinal lesion*, or by *spinal shock*, as to be at once affected by *cerebral* and by *spinal* paralysis. In such cases the phenomena of reflex action, and not the phenomena of reflex action only, but the irritability, must needs be impaired, according to the *law* which I have discovered.

This state of things becomes chronic. These severe and chronic cases, amongst the poor, are consigned to the workhouse. It is in the workhouse, therefore, that we meet with these *exceptional* cases chiefly.

In my first experiments my patients were chiefly private patients, and I particularly selected cases of distinct, but not too severe character—of moderate, but not too long duration—of decided, but not absolute loss of voluntary power, and I only met with *one* exception to the law of augmented irritability in *cerebral* paralysis.

In my subsequent experiments, I made no selection of cases, and there were then *several* exceptional cases.

In my last experiments, already alluded to, made in the institution in which Dr. Reynolds made his, again I met with *several* exceptional cases, although the number of my experiments was small, the fact which I mentioned to Dr. Reynolds, with the request which I have already noticed.

As to this idea of *exception*, although we use the term, I need scarcely observe that it is utterly erroneous. There *can* be no exception to a physiological law. *An exception is an error—an ignorance.*

Thus there can be no exception to the laws—1, That in pure cerebral paralysis there is augmented irritability; 2, That in *spinal* paralysis there is diminution of this irritability.

But when we speak of hemiplegia, we use a term which does not always signify the same thing; which, in fact, sometimes signifies *cerebral*, and sometimes *spinal* paralysis, and the phenomena are in accordance with the *things*, not with the *word*.

The first error committed in this investigation, consisted in the wrong choice of an instrument. It was one of too great violence. The *power* and not the irritability of the muscles was tested.

The second error consists in the wrong choice of terms and of cases. Hemiplegia is sometimes purely cerebral paralysis; sometimes combined cerebral and spinal—a fact in some degree new, resulting, as usual, from a new course of inquiry.

Cleared from all sources of ambiguity in the mode of experiment and in the use of terms, I repeat that my two laws in regard to the condition of the irritability of the muscular fibre in paralytic limbs remain—

1. In pure cerebral paralysis—that in which the influence of the cerebrum *alone* is removed—there is augmented irritability.

2. In *spinal* paralysis—that in which the influence of the spinal marrow is *also* removed—there is, and in a far greater degree, diminished irritability.

As corollaries from these facts become laws, I may repeat that the difference in the irritability of the muscles of the healthy and paralysed limbs in cerebral paralysis is the difference between muscles moved by volition and muscles unexcited; whilst the difference in the irritability of muscles of healthy limbs and limbs affected by spinal paralysis, is the absence or presence of the very *source* of this irritability, and of the other physiological conditions of these muscles. The difference in the *degree* of augmentation in the first case, and of the diminution in the second, is, therefore, perfectly intelligible to all.

To these statements may still be added the conclusion, that, duly employed, the galvanic current becomes a diagnostic—and it has often been a *corrector* of the previous diagnosis—between cerebral and spinal paralysis.

It is trying to think that, after such distinct annunciations of the truth, we shall next read of paralysis—the *cause* of which is *seated* in the cerebrum, or in the spinal marrow, respectively, as synonymous with cerebral and with spinal paralysis. Whereas a disease *seated* in the cerebrum may *extend its influence* to the spinal marrow, and produce spinal paralysis; and a disease not seated in the spinal marrow at all, but in the course of a spinal nerve, may, and does also,

produce spinal paralysis, whilst a disease seated in the spinal marrow may produce cerebral paralysis.

ART. 31.—*On Cerebral, Spinal, and Ganglionic Paralysis.*

By Dr. MARSHALL HALL, F.R.S.

(*Lancet*, Sept. 29, 1855.)

One great result has flowed from the investigation into the varied condition of the irritability of the muscular fibre in paralytic limbs—the fact, that *hemiplegia* is sometimes *cerebral*, sometimes *spinal paralysis*—sometimes *limited* to the exclusion of the influence of the cerebrum, sometimes *extended* to the exclusion of the influence of the spinal marrow.

The distinction which I have established in regard to these two forms of paralysis, to which in this paper I add a third, is anatomical and positive.

When physicians speak of *hemiplegia*, they in reality use a term the significance of which has reference merely to a *symptom*; and that symptom may have a double or even a triple origin.

If hemiplegia affects and excludes the influence of the cerebrum only, the case is, I repeat it, cerebral paralysis; but if it affects or excludes the influence of the spinal marrow also, as it does in some severe cases, it is spinal paralysis; it will constitute one of those cases which, from our ignorance of their real nature, and from our error in viewing the terms cerebral paralysis and hemiplegia as synonymous and identical, have been regarded as *exceptional* cases.

These exceptional cases are rare amongst the milder cases of private practice; amongst the severer cases consigned to the workhouse, they may amount, as in the subjects of Dr. Reynolds' inquiries, to three-fourths of the whole number of cases.

If our terms be once well-defined, all ambiguity is removed; cerebral paralysis excludes the influence of the cerebrum only; spinal paralysis that of the spinal marrow also. The characteristics of each of these, when they are themselves distinct, are as fixed as the laws of physics.

To cerebral and spinal paralysis I must add a *third*, viz.—*ganglionic* paralysis. This paralysis is excluded in pure cerebral paralysis; it is included in spinal paralysis.

Thus, in cerebral paralysis the muscles become atrophied; in spinal, in reality also ganglionic, paralysis, they become *heterotrophied*, if for distinction, I may use that term. I have long regarded the ganglion on the posterior roots of the spinal nerves as parts of the true ganglionic system.

Thus, again, in cerebral paralysis the irritability of the muscular fibre is *augmented*; in spinal paralysis it becomes gradually more and more *diminished*; in ganglionic paralysis, if complete, it may become *extinct*.

In both an anatomical and in a physiological sense, the muscles in cerebral paralysis remain muscles, and their irritability, being unexhausted by the stimulus of volition, is, *pro tanto*, augmented, compared with that of the healthy limbs; whilst in spinal paralysis they gradually lose their muscular power, and in ganglionic paralysis they cease to be muscular, either in structure or in function. In certain cases, as M. Cruveilhier and M. Duchenne have shown, the muscular fibre undergoes the fatty degeneration which has recently attracted so much attention.

After these explanations and definitions, I think our investigations may proceed without any of those apparent exceptions and contradictions which have so much obstructed our progress. We must bear them continually in mind; and we must distinguish between true irritability and mere *force*, and the results will be uniform (unless, indeed, some other element of complication exist, still undetected); and all difference of opinion, so discreditable to physiological and medical science, will cease.

I will now, for the sake of still greater distinctness, throw the subject into a tabular form.

I.—*In Cerebral Paralysis—*

1. *The Reflex Actions,*
2. *The Influence of Emotion, and*

3. *The Influence of Strychnine,*4. *The Irritability,*

are more noticed in the paralytic than in the healthy limbs ;

II.—*In Spinal Paralysis—*1. *The Reflex Actions,*2. *The Influence of Emotions,*3. *The Influence of Strychnine, are extinct, and*4. *The Irritability diminished.*III.—*In Ganglionic Paralysis—*1. *The Structure, and*2. *The Functions, may be alike destroyed.*

Cerebral paralysis may exist alone. Spinal paralysis, of course, *implies cerebral paralysis*. Ganglionic paralysis may exist with or without spinal muscular paralysis. In division or disease of the trifacial nerve we have ganglionic paralysis. And in a case which I formerly published, in which the digital nerve being injured, the nail ceased to grow as formerly. But as spinal paralysis implies cerebral paralysis, it also implies ganglionic paralysis. I have at this moment an interesting patient, who, from inflammation of the sciatic nerve from cold, has lost the power of the limb; the muscles are absolutely unaffected by galvanism, atrophied, heterotrophied, and, I suppose, changed into fat. By restoring the healthy condition of the nerve, will the morbid change of structure undergo restoration? This is a question never yet agitated. It will require much observation and—*experiment*, to determine it satisfactorily; and I propose shortly to add to the present brief sketch some ample details.

I shall first add the enumeration of some other forms still to paralytic affection.

ART. 32.—*Case of "Paralysie Musculaire Progressive."* By Dr. THEODOR VALENTINER.

(*Vierteljahrsh. für die Prakt. Heilk.*, 1855; *Medico-Chir. Rev.*, Oct., 1855.)

The primary lesion, in this interesting case, appears to have been in the spinal cord. (We copy Dr. Sieveking's abstract of the case.)

CASE.—"A gentleman, æt. 45, of robust and athletic habit, and peculiarly gifted, had always enjoyed good health; and although he had occasionally committed excesses in his cups, was generally temperate, and remarkably fond of gymnastics. Ten years previously he once fell on his back, on a sandy soil, from a height of eight or ten feet. About two years after this, the patient, who had experienced no inconvenience at the time of the fall, thought his health failed; his florid complexion became sallow. A year later, in 1847, he had a slight attack of pleurisy; but as late as 1852, he could have experienced no great diminution of physical strength, for he was still able to carry two fifty-pound weights in each hand. In April, 1853, he first consulted Dr. W. H. Valentiner, who found that he had then very little power in his hands; that he was unable to exert any forcible compression, or stretch out his fingers completely; the right hand was the weaker of the two; no emaciation was perceptible; there was a difficulty about all the movements of the body, and the patient had a difficulty in conveying his food to his mouth; no tenderness or change of any kind was perceptible in the spine; no cerebral affections could be traced. The various physicians consulted regarded the affection as one of the nervous system, without being able to localize it. The patient was sent to Franzenbad, a Bohemian watering-place, where he used the baths, and then went to Nancy, in the south of France. Dr. T. Valentiner (the author) was now consulted, and having become acquainted with Cruveilhier's cases, diagnosed the present one as an instance of fatty degeneration of the muscles, with atrophy of the anterior roots of the spinal nerves. In the autumn of 1853, though the paralysis became more and more marked, some hopes were excited in the patient by the occasional occurrence of sudden and frequent twitchings in the affected muscles. In November, the patient was conveyed back to his home; he then exhibited extreme emaciation of the upper extremities; none of the limbs could be properly

extended; in an attempt at walking, the feet dragged on the ground; his back was almost bent double; the face, though already showing symptoms of paralysis, still retained its intellectual expression; sensibility continued unimpaired in all parts of the body. At last, dysphagia supervened; and although the appetite continued good, the paralysis progressed, and a slight attack of bronchitis, in March, 1854, terminated the patient's misery.

"The following are the main results of the post-mortem examination:—The deltoids and other muscles of the upper and fore-arm had almost disappeared; the muscles of the hands were entirely converted into fat; the muscles of the cervical and lumbar region presented a tolerably healthy appearance, but in the dorsal region they were pale, and traversed by yellow bands; and one fasciculus closely resembled fat. The microscope confirmed the various degrees of fatty degeneration observed by the naked eye. The muscles of the lower extremities were in a healthier state than those of the upper. On slitting up the entire dura mater of the spinal cord, about one hundred small white bodies were observed scattered over the dorsal surface of the cord, exclusive of the cervical portion; varying in size from a pin's head to a small pea, smooth externally, rough on the inner side, and grating under the knife; under the microscope they exhibited a dense fibrous tissue, interspersed with pigment. All the anterior roots of the spinal nerves were distinctly thinner and smaller than the posterior roots, flabby, resembling a tissue filled with a reddish serum, and exhibiting under the lens a marked vascularity; healthy nerve-fibres were still visible under the microscope, but many were in a state of fatty degeneration. Nothing of the kind was found in the posterior roots; the cord was found abnormally soft at the part where the three lower cervical and four upper dorsal nerves are given off; at this part the distinction between the gray and white matter was almost effaced; numerous glomeruli (granular corpuscles) were found in the softened part; they occurred in the white, as well as in the gray substance. Scarcely any well-marked ganglionic cells were discoverable in these parts, but were found in the unsoftened portions lower down; no marked lesion could be discovered in the brain; the heart, healthy to the naked eye, showed under the microscope incipient fatty degeneration; much oily matter was contained in the hepatic cells; the nerves of the brachial plexus exhibited no abnormalities; excepting congestion of some parts of the lungs, and slight pleuritic adhesions at the right apex, no other visceral lesion was discovered."

ART. 33.—Case of Paralysis of the third pair of Nerves. By Dr. CHAVANNE.

(*Archiv. Gén. de Méd.*, May, 1855.)

This case is remarkable for an extraordinary phenomenon—effusion of blood in the eyelids. Age not mentioned.

CASE.—M. T.—consulted M. Chavanne on the 17th June, 1853, for acute pain in the antero-lateral part of the right side of the head. There was disgust of food, frequent nausea, and not unfrequently fits of great lowness of spirits. The sight was painful, the pupils slightly contracted, and that on the right side less irritable than the other. Pulse 66. Leeches were applied to the anus, sinapisms to the feet; and he was directed to rest, and take a bottle of Seidlitz water on the morrow.

18th.—Better. The pain has now fixed upon the infra-orbital region, and changed into the character of tic.

21st.—Signs of cerebral congestion, with great depression of spirits.

28th.—Considerable tumefaction of the eyelid of the right eye, with dark discoloration as from the copious effusion of blood into the tissues. This came on spontaneously in the course of the night. It was difficult to separate the lids; but when this was done, the eyeball and the conjunctiva appeared to be in a natural state. The pain ceased with the appearance of the swelling. The general health was not at all affected.

July 2.—On examining the eye, M. Chavanne was astonished to find a state of strabismus, by which the eye was turned outwards and upwards. The pupil also, was slightly dilated and motionless; the sight manifestly enfeebled; the eye somewhat prominent; vision double.

Some days later the eyelids had nearly returned to their natural condition, only retaining some slight traces of ecchymosis, but the power of raising the upper eyelid was very defective. This fact, indeed, and the strabismus before mentioned, gave evidence of paralysis in the oculo-motor nerve of this side.

During the next three months there was a steady and progressive improvement; and at the end of that time every trace of paralysis had disappeared from the eyelids and the eyeball; and the patient was restored to his former sound condition.

ART. 34.—*Cod-liver Oil in the treatment of Neuralgia.* By DR. DURANT, Physician to the East Suffolk and Ipswich Hospital.

(*Assoc. Med. Journal*, Oct. 6, 1855.)

"I was induced," writes Dr. Durant, "to make trial of this remedy as a last resource in a case of the most severe facial neuralgia which I have ever witnessed. The pain was so severe that it amounted to agony, the tears involuntarily flowing over the cheek. Iron, quinine, and arsenic, in full doses, had severally failed in affording more than mere temporary relief. The oil had not, however, been taken longer than a week when the pain became sensibly diminished; and, by a perseverance in its use for a few weeks, the disease, which had existed for many months, was perfectly cured.

"This patient continued well for two years, when he again became the victim of a similarly severe attack. Recollecting the failure of other remedies in his former seizure, he begged that he might at once commence the oil, which desire was at once acceded to, and was attended with a like happy result. From the satisfactory termination of this case, I have been induced to prescribe cod-liver oil very largely in many forms of neuralgia, and, upon the whole, with decidedly good effect.

"Among the more severe cases in which I have seen cod-liver oil act with especial benefit, I may enumerate one of ocular neuralgia, a very severe case of neuralgia of the tongue, many cases of facial neuralgia, several obstinate cases of sciatica, and two or three cases of neuralgia of the rectum, the exquisite suffering from which I have found it both speedily and permanently relieve. Indeed, in this latter form, whether in combination with, or independent of, hæmorrhoids, the oil appears to act most beneficially, and I can with great confidence recommend its use.

"Since noting these memoranda, I find the value of cod-liver oil in neuralgia fully corroborated by Dr. Theophilus Thompson, in his valuable *Clinical Lectures on Pulmonary Consumption*."

ART. 35.—*On the treatment of Sciatica by Croton Oil.* By MR. HANCOCK, Surgeon to the Charing Cross Hospital.

(*Lancet*, April 28th, 1855.)

The six following cases are related for the purpose of proving the position, already advanced by Mr. Hancock ("Abstract," No. XIX.), that sciatica, in the majority of cases, depends upon mechanical irritation of the pelvic nerves, from loaded intestine, or tumors within the pelvis, and not from rheumatism or inflammation of the nerves, as is commonly supposed. The cases certainly show the value of the treatment adopted.

CASE 1.—Captain C—consulted me on the 30th of December, 1853. Has been ill twelve months, with pain in the lower part of the back, extending down the right hip, increased by fatigue. He attributes the pain to a fall on the flat of his back, at which time he had symptoms of ague, rigors, total loss of appetite, great weakness, and nausea; profuse sweating, with bad nights. He had stiffness, like lumbago, after stooping, for above eight months. His bowels, at present relaxed, act regularly once daily, but if balked, they become confined; he sleeps badly; his appetite is moderately good, but very capricious; is easily tired, but becomes refreshed after a short rest. He had a slight attack of yellow fever six months ago. Condition of urine natural; pain relieved by pressure; he is most easy whilst lying on one side (either), with knees raised; he feels

blown out after eating. Take of croton oil, one minim; mercurial pill and extract of henbane, of each four grains; and compound extract of colocynth, eight grains; mix, divide into four pills; take two every other night.

January 13th, 1854.—Better; the medicine acted very powerfully; he felt better directly afterwards; has had much to do, but has been so free from pain as scarcely to notice it. To take five grains of compound aloes pills occasionally.

CASE 2.—C. A.—consulted me, in November, 1853, for sciatica of the right leg. He had been ill four months, and treated for rheumatism by colchicum, blisters, &c., without benefit; he is bent nearly double with pain extending down the course of the sciatic nerve and in the lumbar region; pain most severe at the knee, foot, and calf of that leg; his appetite is good, but he gets no sleep, and feels very weak. Ordered the aperient pills, with croton oil.

The patient came again in four days; he says he was much better the day after the first dose, but, contrary to my advice, he repeated the pills on the following night, which acted so violently that he felt knocked up, the pain being very severe. To have three grains of disulphate of quinine, three times a day.

I saw no more of this patient, but on the 2d of January, 1854, his brother, who consulted me for a similar complaint, informed me that he had rapidly recovered under the use of the quinine.

CASE 3.—H. A.—consulted me, on the 2d of January, 1854, for sciatica of the right side, of five months' duration. He complains of pain in stooping extending down the sciatic nerve, but most severe at the calf of the leg; he cannot straighten his leg with comfort; urine plentiful, but thick; appetite good; bowels rather relaxed. Ordered the aperient pills, with the croton oil.

January 6th.—Pain better in the back, but very severe at the calf of the leg and tuber ischii; complains of sensation of pins and needles in his foot. The medicine acted freely, producing watery evacuations. To have five grains of compound aloes pills every night.

10th.—Better; pain less severe in the back; has still numbness in the heel; urine more clear. The medicine has acted twice daily, removing solid, dark, pulpy, and scybalous matter. Repeat the aloetic pills every night. To have two grains of disulphate of quinine twice a day.

14.—Well.

CASE 4.—E. C.—consulted me July 24th, 1854, for sciatica of right side, of five years' duration; he has never been free from pain during that time. Has taken thirty grains of quinine daily, colchicum, arsenic, hydrocyanic acid, calomel to salivation, and is now taking the iodide of potass. Has had blisters and various irritants applied, also a hot iron passed down the leg in the course of the nerve. When at the worst he became deaf, but has now recovered his hearing; was galvanized for nine weeks. He has suffered from habitual constipation, and occasional diarrhoea. Having read my paper in the "Lancet," he took the remedies advised therein, and has been better since, but he does not attribute any benefit to them, having occasionally been better, and then relapsed; he is better for change of air. The complaint commenced with lumbago. He has difficulty in passing his urine, and when in great pain cannot micturate without straining for half an hour; his pulse averages 72. For the last twenty years coughing or sneezing has produced pain down the sciatic nerve, and eight years ago he suffered so severely from sciatica, that in walking he was obliged to assume the sitting position for two or three minutes before he was able to walk again. He now complains greatly of a sensation of weight in his loins, and states that his sufferings are so great, particularly at night, that he cannot obtain ease without taking frequent large doses of opium. Ordered two of the aperient pills, containing croton oil, every other night.

August 4th.—Mr. C.—has taken two doses of the medicine, both operating very powerfully; the secretions were dark-colored and mixed with scybala. He has slept better the last two nights, and has had more ease in walking, with less pressure upon the back; but the pain always returns in greater violence about half-past nine in the evening. He has taken twenty-five drops of the bimeconate of morphia for the last two nights, and has slept comfortably; he can pass his urine with less difficulty. To have three grains of disulphate of quinine three times a day.

PART XXII.

18th.—Has repeated the aperient pills of his own accord with similar results, and has since taken the quinine. He has not had such acute pain of late, and the pressure upon the back is removed; but he has still much pain as soon as he gets to bed every night, and some flatulency, but the latter he thinks is in some measure relieved. He is still obliged to have recourse to opium. To repeat the quinine, and to diminish the quantity of opium, with a view to its discontinuance.

September 5th.—He has continued the quinine to this date; has had no return of pressure upon the back, but complains greatly of flatulency, particularly when in bed; he has better nights, having rarely had recourse to opium, which he had been obliged to take almost every night for some weeks. He says, however, that at different periods he has been able to abstain for a few weeks. His bowels now act regularly without aperient medicine.

December 18th.—I have not seen the patient since last report. To-day I received a letter stating that there had been no return of pressure upon the back; that he generally sleeps well, having only found it necessary to take opium two or three times, and that for extreme flatulency; that he considered the sciatica cured. He finds that when he dines out, and takes more stimulant, that he has less flatulence. Has discontinued the quinine for three weeks. To have three grains of compound aloes pill every day before dinner.

February 7th.—Has derived great benefit from the last prescription; does not now take opium, and sleeps well; can now bear the motion of a two-wheeled carriage, which he has not done for five years.

March 1st.—Mr. C— called upon me to-day; he is cured.

CASE 5.—Mr. W. K—, æt. 52, residing in Essex, was sent to me in October, 1854, having for years experienced weakness in his back and numbness down the right leg. At present he is suffering from lumbago and pain in the right leg, of six weeks' duration. He caught cold, and was attacked with lumbago, for which an embrocation, a warm bath, and blister were employed, with sufficient relief to enable him, in the course of a fortnight, to resume his occupation of a farmer for nine days. He was not cured, as walking and riding caused him great pain; he could not ride on horseback. At the expiration of this time he again caught cold, and he became worse, the lumbago being more intense, and the pain extending along the gluteal region down the thigh to the knee. Another blister was applied, and tonic medicines prescribed, with some little benefit. He says his bowels are easily acted upon; has suffered from internal piles, and experienced considerable languor for three weeks before the attack, also weakness of his back and chilliness, and a sensation of fulness after eating; perspires greatly. He has had ague several times previous to fourteen years ago; but he draws a distinction between his present chilliness and that complaint in the absence of the hot stage; during the present illness flexing the right thigh on the pelvis has been effected with difficulty and pain, referred to the back of the pelvis, and latterly a gland in the groin has enlarged. He and his family being very anxious lest he should be suffering from lumbar abscess and spinal disease, Mr. Warwick, the gentleman under whose care he was, sent him up to me, and I had the satisfaction of confirming that gentleman's opinion, that there was no mischief of that nature, but that Mr. K— was suffering from lumbago and sciatica, depending upon loaded colon. To have two pills, containing the croton oil, every other night.

November 2d.—Mr. K— called upon me to-day very much improved. He took six pills, and found himself so much better, and the pills had acted so freely, that he discontinued them. He has not taken any medicine for three weeks. He is now quite free from pain, is able to stoop and ride on horseback for a short distance, and can hold himself upright, which he could not do when last here. Describes the alvine evacuations as lumpy, and as though there had been a collection. Repeat one of the pills occasionally; to have three grains of disulphate of quinine, in the form of pill, three times a day.

Not having seen or heard of this patient since the last report, I conclude that he is now quite well.

CASE 6.—Mr. A. H— consulted me on the 1st of August, 1854, for sciatica of the right side, of twelve months' duration. He had tried the Harrowgate and

Cheltenham waters, and cold water cure, without effect. His tongue is much loaded, and complains of itching at anus, and bleeding piles. He says he keeps his bowels open by taking cold water night and morning. He has applied very strong stimulating liniments to the leg without benefit. He has suffered from gout. Ordered, spirits of turpentine, two drachms; castor oil, half an ounce; add cinnamon-water to an ounce and a half; make a draught, to be taken at bedtime.

August 7th.—The medicine acted very powerfully, and with decided relief to the pain. It is now dull, like that of a bruise. To have an ounce of the compound guaiacum mixture twice a day.

I have not seen this gentleman since the last report, he having returned home into the country; but his cousin, who consulted me a short time afterwards, informed me that he was quite recovered.

ART. 36.—*Case of hysterical Hydrophobia.* By Professor BURGGRÆVE, of Gand.
(*American Medical Monthly*, June, 1855.)

This case is an interesting addendum to the article on Hydrophobia in our last volume (XXI). It is another argument in favor of the view there taken, and it is all the more valuable because as yet few of these cases have been recorded.

CASE.—A man, æt. about 50, of a nervous temperament, was brought to the Civil Hospital of Gand, laboring under characterized fits of hydrophobia. He had never been bitten, and knew not what to attribute his disease to. The fits returned at intervals, nearer and nearer, and in a truly frightful manner. The patient began to experience at the epigastrium a constriction, which soon extended to the pharynx, and rendered deglutition not only difficult, but painful. Hence the very idea of drinking distressed him exceedingly. When they offered him the vessel to quench the thirst that burnt him, he clung to it with rage, and, by dint of violent efforts, hardly succeeded in swallowing a few drops of water. The eyes were sparkling, and shunned the light; every shining body increased his agitation. The tongue presented on both sides of the frænum the two small spots observed in ordinary cases of hydrophobia. The patient fell at last into a state of cerebral congestion, which ended in death.

The autopsy did not reveal anything particular about the brain or the meninges, except the injection. The back of the mouth and the pharynx were red, and the latter strangely contracted. At the lower end of the œsophagus existed a ball of lumbricoid worms, some of which had ascended the tube. M. Burggræve thinks these worms may have caused the symptoms under which the patient died. If we analyze these symptoms, says he, we find an hysterical condition carried to its extreme violence. The irritation of the œsophagean nerves extended to the pharynx, and produced there the hysterical ball or constriction. He thinks that if the cause could have been suspected, a vermifuge or a simple emetic might perhaps have saved the patient.

ART. 37.—*On the diagnosis of Epilepsy.* By Professor TROUSSEAU.
(*Medical Times and Gazette*, Aug. 11,—25, 1855.)

Although this terrible disease was known in ancient times, we seek in vain for any exact description of it until the year 1825, when M. Calmeil produced his remarkable thesis. A pupil of M. Rostan's at the Salpêtrière, he lived during a year among the epileptic patients, and observed with great sagacity several thousand attacks. The thesis consists only of some twelve or fourteen pages, but it is a little masterpiece. His not having had the opportunity of studying the disease as seen in private practice, explains the omission of one of its forms very frequently met with, and to which M. Trousseau directs particular attention.

The form described by the Latin writers, under the name *morbus comitialis*, *morbus sacer*, and *herculeus*, is the "grand mal" or "fit" characterized by the following signs:—An acute cry, prostration of the patient, who falls to the ground, convulsions of a special form and short duration, which are followed by a state of somnolence that lasts a longer time, in proportion to the amount of cerebral

congestion present. A minute acquaintance with each of these symptoms prevents a physician ever failing to recognize epilepsy when it exists, while its simulation cannot be successful unless when performed by a skilful medical practitioner. Esquirol, indeed, maintained it could never be simulated; but one day, at Charenton, while he was familiarly discussing the cases with his pupils in his study, he observed M. Calmeil fall on the carpet, the subject of alarming convulsions. M. Esquirol having examined him with great anxiety, turned round exclaiming, "The poor lad is epileptic." The words were hardly uttered, when Calmeil sprang up, and grasping his master's hand, asked him if he was still incredulous as to the simulation of epilepsy.

Nevertheless, there is a sign present at the instant of the fall which no one can imitate, viz., a most marked, cadaveric pallor, that for an instant occupies the entire face. The practitioner arrives usually too late to witness this, the face having by that time become very red. After the fall come the convulsions, but not instantly, there being almost invariably, prior to their advent, a very short period of complete immovability. A marked character of these epileptic convulsions consists in their predominance on one or the other side. Sometimes, though this is rare, they are observed only on one side, but in no case are they equally strong on the two sides. During the first or tonic stage you observe the thumb bent upon the palm, the pronators of the forearm, and the rotators inwards of the arm, enter into permanent contraction, and turn the arm inwards with a slow and interrupted motion, that is sometimes violent enough to induce luxation. At the same time the head is turned to the opposite side, by the contraction of the sternocleido-mastoidean of the side on which the predominance prevails. Ignorant of this, simulators do not fail to twist it to the side on which the convulsions of the arm are strongest. The violent convulsion of the muscles of the face causes a deviation of the commissure of the lips and of the eyes to the side where the predominance exists, giving rise to horrible grimaces. During this period the walls of the chest and abdomen are rigid and motionless, respiration is suspended, whence arise engorgement of the venous system and congestions, and frequently there is involuntary emission of urine, fæces, or semen. The contraction of the depressor muscles of the lower jaw keeps the mouth half open, while the tongue, through the action of the genio-glossi is thrust out between the teeth. The bloody foam which results from its being bitten, is a great aid to diagnosis, especially when the attacks are only nocturnal.

When this tonic contraction has lasted from ten to sixty seconds, the clonic convulsions appear, very rapid at first, but becoming separated by wider and wider intervals of relaxation. After they have continued from one to two minutes, they cease completely, and the patient now in a complete state of resolution, heaves a deep sigh, lets his head fall down, and exhibits a stertorous respiration like one struck with apoplexy or dead drunk. To this first attack there frequently succeeds a second, a third, and so on; and it is to this often fatal condition that the term "grand mal" is applied at Bicêtre and Salpêtrière.

In the simple attack, the coma lasts for eight or ten minutes, when the patient arouses, looks around with anxiety, and places his hand to the forehead, as if to recall something that he had forgotten. He seems as if ashamed, seeks to withdraw himself from the observation of the bystanders, neither answering their questions, or thanking them for their services. Moreover, we may remark not unfrequently, or even ordinarily, signs of a true derangement of the intellectual faculties. Some patients have been seized with a desire of suicide and have even executed it, while others exhibit acts of violence towards those who are present. A considerable number manifest hallucinations or true mania; but frequently headache and sadness are all that remain after the attack. Some of these patients have embarrassment of speech, owing to the painful and swollen state of the tongue, but you must be on your guard here, and not lightly pronounce, as many do, the commencement of a general paralysis. During the existence of the convulsions and coma, the patient is absolutely insensible. This is of importance in diagnosis: for you may excite the mucous membrane of the eye and ear, allow ammonia to be breathed, or fire a pistol in the ear, without the truly epileptic manifesting the slightest sensibility. The simulator,

too, chooses the place where he is to fall and the part of the body that is to bear the shock; and we never find him falling face forwards, without irresistibly interposing his hands as a protection. The epileptic falls no matter where, and he usually does so upon the head, his face exhibiting ecchymoses and wounds in consequence.

Epilepsy is very often a nocturnal disease, especially at the commencement; and it so may continue for eight or ten years without any one, not even the patient himself, being aware of the existence of so important a malady. There are two principal diagnostic signs in such a case, viz., the biting of the tongue, and the involuntary emission of urine, especially in women. If the person who comes to consult you complains of waking with headache, if the lateral parts of the tongue are lacerated, and if you ascertain that urine has been passed unconsciously, do not hesitate to declare that there has been a nocturnal attack of epilepsy. Moreover, in a very great number of cases, you may observe on the forehead, and especially below the eyes, myriads of petechiæ the size of a pin's head, which are never produced under other circumstances. In possession of these details, the diagnosis of this form of the disease becomes certain, while without their aid it is almost always impossible.

Epileptic Vertigo.—This is often met with in practice, and its existence is as real as is that of the epileptic fit, like which, too, it affects the intellect. It is scarcely possible to describe it, save by examples. In childhood, when it is especially common, it may manifest itself thus:—The child stops short in the middle of its play, remains motionless with fixed eye and suspended respiration, returning to itself after seven or eight seconds, and sometimes hardly two. We may observe analogous examples in the adult. A person while playing at cards finds the movement of his hand suddenly arrested when about to play, the card remaining in his hand, as if affixed to it. A deep inspiration occurs, the suspended movement is completed, and the vertigo has passed away. At other times the patient rises, walks he knows not where, striking against objects, and stops short at the instant he returns to himself. At others, he mumbles some unintelligible words, or repeats the same word, as his own name, obstinately, during seven or eight seconds. In all these cases the individual is completely without the external world. Sensation is abolished, and we may shake or pinch him without his feeling anything. In certain cases, as in a patient now in the wards, the vertigo is announced by a peculiar sensation, to which authors have given the name of *aura*, and which in the great majority of cases consists in the feeling of a current that mounts up from one of the limbs, or some other point of the surface, towards the head. At other times there is a sensation of pain, of formication, or of little imperceptible convulsive shocks. In a great number of cases these phenomena constitute the entire affection, and deserve the name of epileptic vertigo. At others, they go on increasing until the fit itself occurs, and then it is usually by the thumb that the *aura* commences. But the fit is only preceded by the *aura* quite exceptionally.

A child, five years of age, was brought for M. Trousseau's advice. Several times a week, and sometimes more than once in a day, the child became the subject of hiccough, which, accompanied by remarkable paleness, lasted for several seconds, and never more than a minute, headache and hebetude succeeding. M. Trousseau, alone in his opinion, pronounced this epilepsy, and a year after, the child had regular epileptic fits. At other times, epilepsy manifested itself by a marked sensation of cardiac suffocation. The patient, seized with most violent palpitations, becomes extremely pale, and loses all consciousness. In ordinary palpitation, consciousness is always preserved; and it is well to be aware of these palpitations in the epileptic, since the patient complaining only of his heart, an erroneous idea of the nature of the disease may be easily formed.

I have stated that disturbances of the intellect are very frequent after the epileptic fit, and they are also met with after vertigo. The head is heavy and aching, the patient being morose and taciturn, and as if stupified for a while, as a half or whole hour. For the purpose of diagnosis, it is of extreme importance to observe these changes; for we find them as a consequence of no other nervous

spasm, however violent it may have been. There may be exhaustion after a violent fit of hysteria, but the intellect always remains very clear. This relative confusion of the mental powers may escape the physician's attention, but it is very rare for it to escape that of the patient or his relatives, so that they should be always interrogated upon this point.

There is nothing special in the vertiginous form, as it depends upon the same causes as the fit; and very often we observe alterations of the vertigo and the fits in the same subject. It is by no means rare, however, to find, after from one to ten years' time, the fits entirely displace the vertigo.

Diagnosis from Hysteria.—I will suppose you observe one young girl the subject of slight vertigo, which scarcely lasts for three seconds, and then another rolling about on the ground in every direction, uttering cries, breaking every object near her, and requiring to be held down by four or five persons—men by preference. It might seem to you that the first had little the matter with her, and that the other was very ill. Not so; the first is the dog that bites without barking, the other the dog that barks without biting.

In hysteria there are usually precursory symptoms. The subjects of it complain of a sense of suffocation, of a fulness about the stomach, an indefinable nervous irritation, and of the sensation of a ball rising into the throat. During the attack the movements are extensive, powerful, and irregular, both sides of the body participating. Considerable change of place results, and much force is required in order to restrain them. There is much noise and little danger; and the scene terminates with a peculiar cough, sobs, tears, and the emission of aqueous urine. The epileptic is a far more quiet patient. Where he is struck down there he remains motionless, and if it should chance to be in the fire he may be burned to ashes. The primary tonic contraction is replaced by clonic contractions, small in extent; there is an amount of insensibility never observed in hysteria, and at the end of the attack peculiarities are noticeable that have already been described.

Diagnosis from Eclampsia.—As to all the phenomena proper to the attack, these are identical; so that we may call eclampsia epilepsy, wanting the relapse; and epilepsy eclampsia with relapse. This is true only as regards the form of the affections, for between their nature there is as much difference as there is between gout and a swelling of the great toe from a prick. In children, we frequently observe eclampsiform convulsions, and they have been regarded as symptomatic of rubeola, variola, and scarlatina, &c. I think that is somewhat of an error; nevertheless, at the onset of a rubeola, &c., the child has a slight convulsion, preceded by a little cry, and throwing back of the head; and a minute after he returns to himself, and takes the breast. Such convulsions usually cease of themselves, and if treatment be adopted for them death will usually be the result. If the convulsive state is reproduced, we usually observe what the nurses call "inward convulsions." The infant is panting, closes and reopens its eyes, a slight guttural *râle* is heard, and the child becomes red and goes off to sleep again,—it is an epileptic vertigo.

However much the convulsions observed during the attack of epilepsy and eclampsia may resemble each other, their continuousness in the latter presents a ray of light for the diagnosis. The attack of epilepsy is of short duration, and when the attacks succeed each other so rapidly that there is not time enough for the patient to recover from the stupor of one before another comes on, we still observe that, whenever the carus commences, the muscles cease to be convulsed, and fall into a state of complete resolution. Such cessation is not observed in eclampsia. During one, ten, twenty, or thirty hours, the patient remains with the eyes convulsed, the head thrown back, and the limbs rigid, without any period of carus with resolution manifesting itself; so that we may define eclampsia as, and it is an excellent sign of distinction, a continuous tonic or clonic convulsion. Nevertheless, it does occur, though very exceptionally, that epilepsy assumes this continuous form in children. It then depends upon some cerebral lesion, as, for example, tubercles, which become the cause of a cerebral phlegmasia, amidst which the convulsions assume the character of continuousness characteristic of eclampsia.

The two affections are, indeed, so nearly allied to each other, that we too com-

monly see eclampsia transformed into epilepsy. Thus, we find children suffering from frequent convulsions during dentition; then, again, on the occurrence of some disease, as rubeola, visceral phlegmasia, etc.: after some years these recur from some insignificant cause, and at last without any cause at all. These children, at first eclamptic, have become epileptic. Moreover, in the families of epileptic patients, convulsions or eclampsia are of frequent occurrence. As a practical rule, when you see convulsions in a child accompanying dentition or an acute affection, do not be needlessly uneasy; but when they occur towards the fifth or sixth year from the slightest cause, and especially without any cause at all, you should entertain the greatest fear that the child is epileptic.

ART. 38.—*On the inter-paroxysmal condition of Epileptics.*
By J. RUSSELL REYNOLDS.

(*Lancet*, Aug. 4 and Aug. 11, 1855.)

On examining a large number of epileptics, Dr. Reynolds says we shall find no difficulty in recognizing the existence of the three following groups, broadly separated from each other:

1st. There are those who themselves say, and whose friends confirm the statement, that they are in perfect health.

2dly. There is another group, marked by notable mental failure, although various in both kind and degree.

3dly. There are others who present some marked derangement of the general organic health, or of some particular functions.

"Of 71 cases which have fallen under my own observation, I place 29 in the first class, 31 in the second, and 11 in the third. These are respectively equal to 40, 43, and 15 per cent.

"Some of the cases placed under the second head presented deterioration of general organic health; but so far as I could learn this was the result of circumstances arising since the development of the disease.

"In examining those of the *first class* more closely, it is found that in respect of intellectual endowments and of organic strength they are (as they say) in perfect health. Many of them are remarkable for their intelligence, quickness of apprehension, memory, and good sense; at the same time their nutrition, temperature, and muscular strength are natural; they eat well, digest well, sleep well, feel well. But even in these individuals there are to be discovered some peculiar phenomena, decidedly not those of health. These are often attended with so little inconvenience that the patients make no spontaneous complaint of their presence, or they may even not recognize them when asked the question, although the physician has no difficulty in their detection. The phenomena to which allusion is made are common to the whole series of epileptic patients; but they alone exist in the first class, and will therefore be considered now.

"The first of these is muscular *tremor* (found in fifty per cent.) It is either constant or occasional, and when the latter, is induced by mental, emotional, or organic changes, or by external impressions, slight in degree, as compared with the intensity of the result. This tremor is variable in extent and in intensity, passing from tremulousness (unnoticed by the patient, but readily detected by the physician, if he grasps one of the limbs) to well-marked rigors. The occurrence of rigors is by no means uncommon in epileptics, when they make any intellectual exertion, are subjected to emotion, or to any physical change.

"But, passing beyond this condition, some *clonic spasms* are exceedingly frequent; they occur in 57 per cent. Variations are observed in the situation and force of contraction. In some cases they have not attracted the patient's observation; in others they are very annoying, but, so far as I have seen, never painful. In this respect these contractions differ widely from the tonic spasm of common 'cramp.' When occurring in the neck, they give rise to an unpleasant sense of constriction, the patient frequently feeling that his cravat is too tight, although this may not in reality be the case. (Trachelismus of Dr. Hall.) In the limbs, they cause jerking movements: if the hands and arms are affected, objects are thrown out of the former; if in the legs, the patient may fall down. This occurred seven or eight times in the day in a gentleman under my care.

If sitting, the legs would be suddenly extended with much force; the diaphragm was sometimes affected, and then an unpleasant barking sound was caused by a sudden expiration. In other cases, the spasm assumes a tonic character, the limbs, head, and neck being fixed for some moments, and the patient unable to move or speak. This may occur without the slightest obscuration of mind. In one curious case which I have seen, there were not unfrequently attacks, resembling, in respect of the convulsive elements, a perfect epileptic fit, but there was not in these attacks any loss of consciousness. Strabismus is frequently observed; and when this evidence cannot be obtained, it may be inferred that irregular action of the ocular muscles takes place, from the patient complaining of occasional diplopia. There is, in children, a peculiar oscillation of the eyeball. Carpopedal contractions and grinding of the teeth belong to the same category. Starting from sleep is exceedingly common, and although in many instances this may be due to some emotional or semi-volitional condition connected with dreams, in other cases it does not appear to be so related. In several children I have noticed a more or less constant condition of chronic movements, these being much exaggerated for some days prior to an attack. Further, the reflex movements, of physiologic character, are often abnormally performed; deglutition is clumsy; respiration hurried or jerking, often suspicious or yawning. A peculiar stertor is very common in epileptics, even when awake. These phenomena, taken together, were marked in 52 cases, or 73 per cent, and it is probable that the number would be much larger if the patients could be observed more constantly, as they were very often denied until discovered by my own direct observation. Our knowledge of disease is accurate in proportion to the number of objective symptoms. Those, the description of which passes through the patient's mind, are subjected to the moulding influences of his individual peculiarities, and that which makes us differ from each other in intellectual life, makes us describe differently the conditions in which that life is placed, or by which it is affected.

"In addition to these muscular phenomena, we frequently recognise in the first class of epileptics an excessive readiness of emotional disturbance, and an absence of power for the control either of the emotion itself, or of its expression. The degree to which such excess of emotional action may be carried is very variable, and it is presented much more frequently by women than by men; and in the former the epileptic attacks sometimes alternate with, are preceded or followed by, hysteric phenomena. * * *

"The second class of cases is formed by the presence of more or less marked change in the intellectual powers. This field is so wide that I can do little more than mention some of the most prominent objects it contains. By far the commonest and earliest change is *loss of memory*. At first it is noticed only with regard to the trivial matters of the day; whilst those long since passed are readily recalled. Subsequently, the patient forgets the earlier elements of his knowledge, and his mind then becomes an utter blank. The progress of deterioration resembles, in many respects, that which is natural to the decay of human life; often, as it were, anticipating the work of time, and hurrying a just opening life into a premature old age, with all its feebleness, and more than all its gloom. Failure of memory (except when occurring only as the immediate sequel of severe attacks) is commonly attended with diminished power of apprehension; and this is at first most marked with regard to new ideas, but, subsequently, appears to affect the mind in relation to previous knowledge, diminishing the power of applying past experience to the new circumstances of daily life. The patient cannot, or frequently does not, concentrate his thoughts upon any subject. Ideas follow one another, it may be in very rapid succession, as they are accidentally suggested by one another, or by surrounding events. When this power is only slightly deteriorated, the mind may be recalled by a strong effort, or a powerful impression; but when the intellectual disease has advanced further, this becomes impossible, and incoherence of expression indicates but too plainly the incoherence of thought, which may pass still further into utter fatuity.

"These earlier mental changes resolve themselves mainly into defective volition. The first failure of memory is due to want of attention rather than to anything else. The individual does not sufficiently attend to what is going on for deep impressions to be made, and consequently there is no power which can

recollect them. Attention appears to be simply the direction of consciousness by an effort of volition; and in this first failure there is the first indication of diminished will. Probably the loss of apprehension has its origin in the same cause; it is the consequence of neglected or not properly exercised attention. By simple disuse, the power becomes diminished. The same thing is to be observed with regard to thought. The associations, which in mental health form the basis of correct judgment and logical appreciation, from having their ground in the truest relations which we can discover between separate ideas, are lost altogether, or are replaced by associations of a merely accidental, or inessential character; and thought becomes incoherent, or 'wandering,' from the deficiency of voluntary power exercised in its direction and control. Thus, with deficient volition, and with increased readiness of emotional disturbance, the epileptic is reduced to a mere machine played upon by every external impression, or suggested feeling, and without any power to appreciate, account for, or control his state.

"It may be said that some epileptics give evidence of most powerful and determined will. History furnishes the record of some of the world's masters who were epileptic, and I have seen some cases marked by great so-called self-willedness and determination; but these appear to be exceptions, and to be more readily referable to obstinate or pertinacious clinging to an idea, for which very frequently the individual can supply no reason. It is, as he says, an impression which guides him, not a duly formed volition, and an impression which he will admit to be as frequently wrong as right. There are doubtless some cases in which no abnormal deficiency can be detected; but many individuals, in whom excess of determination might be at first sight supposed to exist, in reality possess a volition defective in its highest function—viz., the control and direction of their own minds.

"The question at once arises, with regard to the failures which have been mentioned, whether they are not simply the consequences of attacks? In order to answer this question, let us remember the large class of cases in which no such mental deterioration could be discovered; and yet farther, that the degree of intellectual weakness bears no constant proportion to the severity, frequency, or duration of the fits, as the following numbers show. They represent the first twenty cases of which I have the record, and they are taken, therefore, indiscriminately. Eight presented marked cerebral failure; twelve did not. Of the eight in whom the memory and other faculties were deteriorated, the disease had existed from one to five years in four, from five to ten years in three, from ten to fifteen years in one; whereas of those in whom the mind was healthy, the disease had existed from one to five years in three, from five to ten years in two, from ten to fifteen years in three, from fifteen to twenty years in one, from twenty to twenty-five years in two, and upwards of forty years in one. The question of mental failure is not to be resolved, then, into one of duration of the disease. I have examined this question very carefully in all the cases which have fallen under my notice, and the result is, that in almost every case in which the mind was severely impaired, this impairment was noticeable from, or very soon after, the commencement of the disease, and increased steadily as the disease advanced; and the probability is, that those who have not after a few attacks evinced any mental failure, will not do so to any marked degree, even after many years have passed. In some cases, the mind had suffered seriously before any convulsive phenomena presented themselves. In one case, ridiculous ideas, and even distinct delusions, existed for nearly two years, at the end of which time a convulsive paroxysm occurred, and the patient has since become a confirmed epileptic. In another, occasional aberration occurred for six months, and was then followed by two or three epileptic attacks, from which, however, and from his mental disturbance, this patient has now happily recovered. In a third case, decidedly maniacal attacks took place, not either immediately before, or immediately after the fits, but in the intervals between them, and sometimes they appeared to alternate with the convulsions. Instances of variations might be multiplied indefinitely, but I feel convinced that when an epileptic presents mental failure or derangement, it is not so much the result of the paroxysms to which he has been subjected, but the effect either of the epileptic conditions themselves, or of some morbid processes developed coetaneously with them.

"The *third class* is formed by those patients in which there is some evident bodily change. This change is partly of a physiological character—the first and second dentition, puberty, pregnancy, parturition, and the climacteric period,—and partly pathological—plethora on the one hand, anæmia on the other; and gathered around these two conditions almost every form of local disease and of general cachexia." About this class, Dr. Reynolds says, "these cases are, so far as my observation has extended, much less numerous than the other two."

The rest of the paper is occupied with some considerations of a speculative character, which possess no novelty, and with some remarks on treatment.

ART. 39.—*On the use of Cotyledon Umbilicus in Epilepsy.* By Dr. PEACOCK, Assistant-Physician to St. Thomas's Hospital.

(*Medical Times and Gazette*, Aug. 11, 1855.)

In this Journal we find the particulars of four cases of epilepsy treated with this remedial agent without any beneficial results. The extract was of unquestionable excellence, and the usual dose was from three to six grains daily. In all the cases, the greatest care was taken to detect any effects which might result from the use of the medicine, and in none were any symptoms observed which could be referred to its action, though, in the last two cases, the doses employed were very large, and the medicine was tried for several weeks. In one case, the increase of the dose corresponded with a temporary improvement in the patient, he being for three weeks without any fit, though generally they had occurred in greater or less number every week; but a perseverance in the use of the medicine showed this improvement was only coincident, the fits again recurring as frequently and as severely as before; and it was further ascertained that similar cessations had previously been observed for even a longer period. In the three cases, which had before been treated with the sulphate of zinc, the patients and their friends all considered that they were better while under that treatment than when the cotyledon was exhibited.

ART. 40.—*The use of Belladonna in Epilepsy.* By Professor TROUSSEAU.

(*Medical Times and Gazette*, Aug. 25, 1855.)

M. Debreyne, physician to La Trappe, and M. Bretonneau, undertook, twenty-five years since, in two different parts of France, a series of patient researches into the results furnished by belladonna, already recommended by Storck; and founding their opinion upon some cases which seemed conclusive, proclaimed the superiority of this therapeutical agent; unfortunately, such superiority is only relative. For twelve years I have employed it, having always had under treatment from eight to ten persons. In some of these patients the belladonna has completely failed, in others it has produced some melioration, while in some cases—these being, it is true, the smallest number—the greatest advantage has been derived from its use. I have so treated 150 patients, and of this number twenty have been cured, if they do not even yet relapse; and M. Blache has employed it during the same period in his large private practice, with a like proportion of successes and failures.

The mode of administration plays a great part in this medication, at which we need feel no surprise, as this is the case with the most powerful specifics. Thus Torti declared, with justice, that a pound of bark, administered without method, would not cut short a fever that two ounces, properly given would cure. Pills are to be formed, composed of extract and of powder of the roots of belladonna $\frac{aa}{\text{}} \frac{1}{2}$ grain. A pill is to be given every night for a month, and two pills every night during the second month. For the third month, three pills, and for the fourth month four pills, are required; the entire number, whatever this may be, always being taken as one dose. If we find the patient is very susceptible to the action of belladonna, we must only increase the dose every sixtieth day. During all this time the family must keep a register, in which are entered the number and nature of the fits or vertigos; and if by the end of a year you have obtained a sensible diminution in the number and duration of attacks, you may reckon with certainty on the cure, providing the medicine be continued from

two to four years, the dose not being increased after the physiological action of the drug is sufficiently manifested. We must not be surprised at this lengthened period of treatment, for such is necessary in almost all chronic affections. Before ceasing its administration entirely, and especially if it is borne with difficulty, it may be suspended for two or three, and then for four months, resuming it for a month, and in a diminished dose.

ART. 41.—*Case of Traumatic Tetanus.* By MR. GEORGE GARNHAM.

(*Lancet*, Aug. 18, 1855.)

This case is related, and three others are alluded to, for the purpose of showing that the amelioration in the tetanic symptoms was concurrent with the appearance of mercurial action. "Although in one case bleeding was used, in another digitalis, in a third turpentine dressing, and in a fourth chloroform (topically), yet the four cases were all treated with calomel and opium, and the first sign of the diminution of the disease was contemporary with the tenderness and swelling of the gums." So speaks Mr. Garnham. Now all this we can understand, for we hold that all spasm is absolutely incompatible with any kind of inflammation.

CASE.—G. G.—, æt. 27, a strong man, of sanguine temperament, on the 23d of August, 1854, while riding, was thrown from his horse, and received a contused wound on the knee, just over the superior edge of the patella. The wound appeared little more than a deep graze; but after the lapse of a few days, during which poultices were applied, great swelling having taken place on each side of the knee, a slough separated, disclosing a deep but healthy-looking ulcer. On examination, the integument was found to be separated from the parts beneath to the extent of three inches, on either side of the knee: and, by pressure, a great accumulation of healthy-looking pus was discharged. Nothing worthy of notice occurred up to the evening of the 9th of September, when my attention was directed to a slight stiffness in the action of the jaw; the ulcer, too, which had up to this time been covered with healthy pus, presented a dry appearance, the edges being of a dark red, approaching to livid. He complained of a slight cold, which he attributed to his having approached the open window without his coat. The bowels being costive, I ordered him calomel, two grains; compound extract of colocynth, eight grains; immediately: to be followed three hours afterwards by a black draught. The jaw to be fomented, and rubbed with a liniment, composed of liquor of opium, two drachms; and compound soap liniment, ten drachms. The bowels were freely opened from the purge; but the stiffness of the jaw continued to increase almost imperceptibly till the night of the 14th, when symptoms of acute tetanus set in, spasms occurring at intervals of very few minutes. Early in the morning of the 15th, I was sent for, and procured the assistance of Sir John Fife. We dressed the wound with chloroform, covered by a poultice; and prescribed a febrifuge mixture, with twenty minims of tincture of digitalis at a dose, every three hours: a blister between the seat of injury and the spinal cord: and pills, containing calomel, four grains; and opium, one grain and a half: to be taken every three hours. The jaw being now constantly almost closed, we ordered friction every three hours, with a liniment of equal parts of compound soap liniment and tincture of aconite. The pulse, which had hitherto never exceeded 90, during the night of the 14th reached 120.

Sept. 16th.—He had passed a very restless night, sleep being entirely prevented by the frequency of the spasms; pulse 100; bowels slightly relieved, stool liquid, very dark-colored, and offensive; spasms not so frequent as during the night; complains of tension of the abdomen, causing vomiting. The muscles of the face towards evening were much relaxed; mouth open to the extent of three-quarters of an inch; can drink easily.—10 P. M.: Symptoms all somewhat increased.—12 P. M.: Slightly delirious; spasms violent every four or five minutes.

17th, 4 P. M.—Pulse 108; sleeps half an hour at a time between the spasms; complains, in passing urine, of the stream stopping suddenly, apparently from spasm.—6 A. M.: Pain in the bowels, and is sick eight or nine times within half an hour; the breath has slight mercurial fetor. Reduced the dose of calomel to

one grain and a half.—8 P. M. : Pulse 96 ; spasms of abdominal muscles seem somewhat increased ; purged, stools slightly tinged with blood.

18th.—Pain in the bowels, purging, and bloody stools, still continue ; pulse 104, very weak ; mercurial action fully established ; severe spasms only precede evacuations from the bowels ; the wound suppurating freely. Applied another blister in the same line with the former one, to be dressed with savine ointment : ordered the calomel to be discontinued, and one grain of muriate of morphia at night : and a mixture composed of liquor of acetate of ammonia, two ounces ; tincture of digitalis, two drachms ; water, six ounces ; one ounce every three hours ; and a pill every three hours also, composed of one grain of opium, and three grains of carbonate of ammonia. He has drunk half a bottle of sherry in the course of the day, and also a good deal of beef-tea.

20th.—Spasms during the day rather frequent, but not so severe, and principally affecting the lower extremities : pulse from 100 to 140.

25th.—Since last date the spasms have been gradually decreasing in force and frequency, and he is now able to stop the spasm of the leg, by grasping tightly the superior part of the thigh.

From this time no bad symptom made its appearance ; the wound healed easily, and he is at this moment in the enjoyment of his usual health.

(B) CONCERNING THE RESPIRATORY SYSTEM.

ART. 42.—*On the pathology of Hooping-cough.* By Dr. GRAILY HEWITT, Surgical Registrar to St. Mary's Hospital.

(Pamphlet, Churchill, 1855.)

This short essay will well repay perusal. Its object is not so much to discuss the essential nature of the disease, as to set forth its effects upon the lungs, and to show that these are other than the consequences of pneumonia. The essay is based upon nineteen carefully recorded cases.

It is very well known to those who are acquainted with the literature of the subject that the collapsed condition of the lung, which is so often met with in hooping-cough, and generally designated under the term "lobular pneumonia," is not pneumonia in the ordinary sense of the word. Dr. Alderson, who was the first to direct attention to this important fact, called this condition "carnification." Subsequently carnification was shown to be identical with the condition of the lung which is met with in new-born children—the *atelectasis* of Jorg. This opinion was stated by Legendre and Bailly, in 1844, in their valuable treatise on the pulmonary affections of children.

"The portions of lung affected with the so-called lobular pneumonia were found by them to be inflatable, the effect of the inflation being to restore to the portions affected their normal appearance and qualities. For the name 'lobular pneumonia' they substituted the term '*état fœtal*.' They pointed out the difference which existed between the effects of inflation on the portions which exhibited the fœtal condition, and on those affected with true pneumonia, the inflation producing no effect on the latter, while it restored the former to their normal appearance and qualities. The anatomical character of this 'fœtal condition' they described as follows:—The portions of lung affected were depressed below the surface of the adjacent healthy lung, non-crepitant, firm, compact, sinking in water, section showing cellular interspaces, the color of a red violet, sometimes darker, consistence variable, sometimes friable, the section smooth and not granular. To these characters was added the important one of the complete infatibility of the affected portions. Two varieties of this fœtal condition are described—the one simple, the other congested, the names sufficiently indicating the distinctions between them."

This opinion has been abundantly verified by subsequent experience, but the fact is not so well known as it ought to be, and therefore we are glad that Dr. Hewitt has come forward to elucidate it. The name which is now generally used to express this condition of lung is *apneumatosi*s. This was given it by Fuchs, and it is perhaps more expressive than any other.

Dr. Hewitt's observations, as we have said already, were nineteen in number.

"The ages of the children who were the subject of them varied from four years to one month, the average being eighteen months. In all, the state of the lungs was carefully noted. The chief lesion found after death was collapse of the lung substance. The following is a statement of the degree to which this pathological condition manifested itself in the different lobes of the two lungs.

"In the *right lung*, portions of the upper lobe were found collapsed in six cases, and in four more to a less degree.

"The middle lobe was collapsed, wholly or in part, in sixteen cases.

"The lower lobe was more or less affected with collapse in eighteen cases.

"In the *left lung*, the upper lobe presented the same lesion in fifteen cases, the whole of the anterior tongue-like prolongation being in most of the cases affected.

"The lower lobe was collapsed more or less in eighteen cases.

"In seven of the cases, the portions collapsed were also congested—in some to a high degree.

"The test of MM. Bailly and Legendre, viz., the inflatability of the portions of the lungs thus affected, was used in almost all the cases; and on that and other grounds it was determined, that the particular part of the lung in question was collapsed and not hepatized.

"It will be at once perceived, that the occurrence of collapse was almost universal; all the cases, with the exception of one, in which there was extensive tuberculization of the lungs, presenting a greater or less amount of lung substance affected in this manner.

"The collapsed portions were found to have the following general characteristics. They were abruptly separated from the adjoining healthy lobules, depressed below the general surface of the lung, less bulky than the unaffected portions. The color varied from a reddish violet to a deep purple; the firmness was variable, in most cases, however, having a great resemblance to that of a piece of flesh, noncrepitant, sinking immediately in water, lobular cellular interspaces well marked. No air-cells visible in the surface, or on section, even with the aid of a lens. Section of collapsed portions showed a uniform smooth surface, slightly friable in some cases, and emitting on squeezing a small quantity of non-aerated puriform fluid. The lung substance did not break down under pressure, as is seen in hepatization. When a blowpipe was introduced into the bronchus leading to the affected portions, and inflation performed, the aspect of the collapsed portions underwent a striking change. They immediately assumed the appearance of the adjacent healthy lobules, and were in no wise to be distinguished from them—becoming enlarged, and the air-cells on the surface easily distinguishable by the aid of a lens. The color was changed from a dark violet to a light pinkish hue, such as is habitually seen in the healthy lungs of children. The lung substance was found then to float readily on water, and to have become crepitant. When these inflated portions were left to themselves for a short time, they became to a certain degree collapsed; the lung contracting and expelling a portion of the air artificially introduced. The inflation was performed with ease in most of the cases; in some, however, the force necessary to be used was more considerable, and some portions were not inflated at all by the additional force used. The portions which occasionally resisted full inflation were the posterior surfaces of the lower lobes.

"The depth to which the lung substance was implicated was variable. In all cases the collapse exhibited a preference for the portions of the lobes most distant from the root of the lung—thus the margins of the lobes were found chiefly affected. A great part of a whole lobe was, in many cases, collapsed deeply as well as superficially; the upper lobes, however, were never found very deeply affected.

"The anterior tongue-like prolongations of the two upper lobes were, in nearly all the cases, collapsed, and were thin, pliable, and *lobulated*, to the feel, if I may be allowed the use of such a term. The external surface of the upper lobes often presented little digital pits or depressions, the depressed surfaces being of a color approximating to violet, and constituted by lobules in a semi-collapsed state. Inflation quickly gave the lobe a uniform, smooth surface.

"Such was the general appearance and character presented by the collapsed portions. In many of the cases these portions were themselves the seat of other

alterations, to which I shall now allude. The collapsed portions, in several instances, were spotted on the external surface, which was due to the fact that certain air-cells, either singly or in groups, were distended with a muco-puriform fluid. They were chiefly seen on the external surface, but a section also showed them, though less distinctly. The patches thus constituted were of a variable size, but mostly as large as a millet-seed, very slightly elevated above the surface, of an opaline gray or yellowish color. On pricking them with the point of a lancet, a small quantity of puriform fluid exuded, and the little eminence disappeared. They were very different in appearance and general characters from tubercular deposits, for which, however, they might, at first sight, have been taken. They were identical with what has been described by Legendre and Bailly as the first and second stages of their catarrhal pneumonia. Section of the lobules affected in this manner exhibited similar spots or patches. A further stage of this process was exhibited in some of the cases, where cavities of a larger size were found occupying the terminal extremities of the bronchial tubes. They were, for the most part, scattered, and not very numerous, always situated in portions of the lung which were collapsed."

True hepatization of the parenchyma of the lung was only met with in four out of these nineteen cases, and in these it was very partial. In all, there were signs of inflammation in the bronchial tubes, especially in the smaller ones; and in all, the non-collapsed portions of the lung were more or less emphysematous, with here and there large vesicular dilations. As to the rest there was nothing remarkable.

We have only one comment to make upon these facts. It is very clearly shown that pneumonia, properly so called, has little to do with whooping-cough, and we are left to suppose that bronchitic inflammation plays some important part. Is it so? Has not the inflammation subsided, in those cases where it ever existed, before the supervention of the spasmodic phase of the disorder, and are not those the traces of congestion, not of inflammation, which are written upon the bronchial air-passages at this time? The general symptoms, we think, are quite conclusive upon this point, and we cannot find any contrary evidence in the condition of the lungs after death. It is to congestion, and not to inflammation, that the condition of the lungs points.

Dr. Hewitt adopts Dr. Gardner's views in accounting for the collapsed and expanded condition of these cases, and he explains these views. He also discusses some other topics. He considers a shallow and imperfect, and therefore very quick respiration—sometime as high as 75 or 80 in a minute, without any marked indication of distress, such as are met with when the breathing is very quick in acute affections of the lungs,—as one of the symptoms of the collapsed condition of the lungs; but upon this and other points we must refer to the essay itself, merely repeating, what we said at the beginning, that it will well repay perusal.

ART. 43.—On the contagiousness of Whooping-cough. By Professor TROUSSEAU.

(*Medical Times and Gazette*, June 2, 1855.)

The following remarks occur in a clinical lecture recently delivered in the Hôtel Dieu at Paris:

"We have had a slight epidemic of pertussis in the children's wards, where it was introduced by a single case. During a certain period, all the children in the ward, and those who were admitted, acquired the disease. Then, at a certain period, although there were from eight to ten children at the height of the disease, others were admitted without any of them catching it. Thus to render contagion possible, certain conditions are necessary, which are no less real for being undetermined."

ART. 44.—The use of Quinine in Whooping-cough. By M. LECARDE.

(*Journ. de Med. et Chir. Prat.* July, 1855; and *Dublin Med. Press*, July 18, 1855.)

"We seldom see whooping-cough declare itself at once, it is almost invariably preceded by an incubatory bronchitis with fever. When this bronchitis appears

in a child during the prevalence of an epidemic of whooping-cough, we may suspect the existence of the latter, but it is not yet present with its fits and nervous symptoms; the period has not arrived for administering the sulphate of quina. This is especially the time to employ emetics, particularly ipecacuanha, emollients, and revulsives to the extremities. The salt of quina should be reserved for the second or spasmodic stage. It is then exhibited in powder at the rate of from three grains to half a scruple daily, according to the age of the child, care being taken to administer the dose immediately after the fit, in order to give the remedy time to act before the next paroxysm.

"When the doses are regularly taken, it is unusual not to observe a sensible modification in the attacks. They are shorter, and consequently more tolerable. After two or three days' employment of the remedy, the paroxysms become less frequent. The disease does not entirely disappear; we know that unfortunately it has almost always a fixed duration of from forty to fifty days, but at least it is supportable, the fits occur at longer intervals, and are free from any alarming character.

"Before I thought of trying sulphate of quina in the treatment of whooping-cough, I had employed all the means recommended in that disease; belladonna in all forms, assafoetida, sulphuret of potassium, coffee, cochineal, &c. None of these remedies seemed to possess the sedative power of the sulphate of quina. At first I even employed some of them concurrently with this salt, but I thought I derived more advantage from its use when I gave it alone, and I have therefore latterly confined myself to it. I at most prescribe, in addition, a pectoral infusion, and sometimes a spoonful of syrup of lactucarium when the little patient is deprived of sleep."

ART. 45.—*The insufflation of powdered Nitrate of Silver in Laryngitis.*

By M. EYFERT.

(*Annalen des Charité Krankenhouses*, Bd. v; and *Med.-Chir. Rev.* July, 1855.)

Trousseau was the first to recommend the inhalation of caustic powder as a simple and effectual mode of treatment in certain forms of laryngitis; and since this time several persons, and now M. Eyfert, have borne testimony to the same effect. This plan is much more easily carried out, and quite as effectually, as the analogous plan of applying caustic solutions to the larynx, and M. Eyfert directs particular attention to this point. The powder inhaled was composed of three grains of nitrate of silver in a drachm of sugar of milk, and about as much as would lie upon the barrel of a steel pen was inhaled daily.

The inhalation is conducted in the following manner:—A steel pen, charged with as much powder as it will hold, is attached to one end of the barrel of a quill, which is also open at the other end. This is introduced far enough into the mouth to bring the steel pen opposite the root of the tongue. The lips are now closed around the quill, and the nostrils compressed, while the patient is desired to draw in air rapidly and forcibly through the quill barrel. Almost every one fails at first, but all succeed on the second or third attempt—the cough and irritation of the larynx announcing the penetration of the powder there. Even delicate females and children easily practise the insufflation, and will repeat it for days or weeks together. Young children may have it administered by an apparatus contrived by Professor Burow. M. Ebert has as yet only employed the remedy in laryngitis; and he briefly relates six cases of its successful application.

ART. 46.—*On Rheumatic Pneumonia.* By M. TROUSSEAU.

(*Medical Times and Gazette*, June 16, 1855.)

M. Trousseau is speaking in a clinical lecture:

"About a month since, a young man was admitted with all the signs of pneumonia, and, kermes having been administered, the next day all traces of pneumonia had disappeared. To what were we to attribute so sudden a retrocession? Was it the result of treatment, or must we seek for the cause in some peculiarities attaching to the nature of the disease itself? The latter interpre-

tation received some light from what was observed at the next visit, when the left great toe was found red, swollen, and painful, the tendinous sheaths along the dorsum of the foot exhibiting a like condition. Next day, the right foot was similarly affected, though in a less degree. Two days ago, a woman was admitted with the following symptoms: strong febrile action, redness and swelling of the left leg and foot, and severe pain in the entire upper extremity and trunk of the same side, the pain exciting cries on moving the parts. The patient especially suffered at the left side of the chest, but no abnormal sounds were audible. During the night cough came on, and in the morning a manifest *souffle* was audible in the supra-spinal fossa, while around and in the infra-spinal fossa was heard a fine sub-crepitant *râle*. During the cough, dry crepitating *râles* and bronchophony were heard, and two or three pneumonic sputa were expelled. This morning all signs of pneumonia had vanished. Here again I hesitate to attribute such prompt resolution to the treatment, especially as the apex was the part involved—a form of pneumonia regarded by all physicians as especially serious. I prefer explaining so rapid a termination by the nature of the pneumonia itself, which I regard as *rheumatic*.

"Too partial to localization, practitioners are only accustomed to recognize rheumatism as affecting certain tissues, viz., the muscles, the aponeuroses, and the joints, and when it manifests itself elsewhere they call it by some other name. This is as if we only acknowledged syphilis as we observe it on the penis, and made so many distinct affections of its manifestations on the throat, skin, &c. But syphilis is recognized to be the disease in all these accidents, and why should it not be so with rheumatism? That it attacks all serous membranes is an indisputable fact since Bouillaud's beautiful researches, which have so much advanced the pathology of the heart. When in the course of acute articular rheumatism any of the serous membranes become affected, it is termed a pericarditis, pleuritis, meningitis, &c., according to the membrane attacked. This is right enough as far as it goes; but for the proper denomination of the disease, which is a kind of definition in a single word, we ought to add the epithet 'rheumatic.' When a man accustomed to suffer from rheumatism acquires, as a consequence of cold, a pain of the shoulder, hip, &c., he at once says he has an attack of rheumatism. But instead of this pain let there be a sore throat, and both patient and doctor cease to be logical, and call it *angina* instead of rheumatism; just as if there were not a true rheumatic pain of the fibrous parts of the pharynx and palate, pain followed by fluxion, tumefaction, and redness of the pharyngeal mucous membrane. Do we not find rheumatism of the fibro-serous tissues of a joint accompanied by tumefaction of the subcutaneous cellular tissue, and bright redness of the skin; and why should we not admit the same influence in the delicate and vascular mucous membrane? For my part I should not hesitate to recognise a rheumatism in such a case, or if you like it better, a rheumatic *angina*.

"This distinction may serve for the explanation of the very great differences observed in the progress and termination of anginas, regarded by some physicians as being of the same nature. Thus, simple inflammation of the tonsils goes through all its stages, in spite of whatever treatment may be opposed to it, and a patient accustomed to such attacks will warn his attendants of the inutility of endeavoring to prevent the formation of abscess. A rheumatic *angina*, on the contrary, will often disappear in the course of a night, whatever the treatment adopted, leaving the physician astonished at his therapeutic success, the result, however, being really due to the essentially mobile character of the affection. Descending lower down in the digestive canal, we can explain those sudden diarrhœas which manifest themselves under the influence of a chill. The fibrous portions of the canal become painful, and the contractions more considerable and more frequent, a fluxionary movement being at the same time established towards the mucous membrane, the secretions of which are increased. Such diarrhœas are of short duration, unless, indeed, the rheumatism take on, as it may anywhere, a chronic character.

"After these considerations, does it seem strange to admit a rheumatic pneumonia? Suppose the pulmonary tissue, or, what is the same thing, the fibrous tissue of the extremity of the bronchi, becomes seized with rheumatism, what

are the immediate results? Tumefaction and congestion of the mucous membrane, and an infiltration of the cellular tissue; that is to say, the anatomopathological conditions of œdema or of pneumonia in its earliest stage; with this peculiarity, that such lesions, participating in the fugacious nature of rheumatism, do not possess the fixity and persistence of the lesions of ordinary pneumonia. It is in cases like these that therapeutical results seem so marvellous, and so they would in our own two cases had we not a better reason to give for the rapidity of the cure. They were, in fact, the examples of rheumatic pneumonia, the one occurring in a young man who was at the same time suffering from rheumatism of both feet, and the other in a girl who had formerly had rheumatism, and together with the pain in the chest complained of rheumatic pains along the whole of the same side of the body. In similar cases, I shall not hesitate to admit the existence of rheumatic pneumonia, too happy only thus to complete my diagnosis, and to become enlightened as to the amount of importance that should properly attach to my therapeutics."

ART. 47.—*Case of Pneumonia, with solid casts in the bronchial tubes.*

By Dr. WILKS.

(*Pathological Transactions*, vol. vi, 1855.)

J. J., æt. 47, was admitted into Guy's Hospital on March 8th, 1855. He was a mason, and said he had been ill seven days, and was understood to state that he had walked from his lodging, at Limehouse. When he went to his ward, he said that he felt better, and would not go to bed, but sat up and took his tea. Shortly afterwards Mr. Stocker, the apothecary, saw him, ordered him to bed, and examined his chest. That gentleman found the right side universally dull on percussion, and a total absence of all sound during respiration. The patient died on the following morning.

On a post-mortem inspection, the whole right lung, except at its very lowest part, was in a state of gray hepatization, and the bronchial tubes were filled with solid casts of lymph. These penetrated as far as could be dissected, and, no doubt, were connected with the exudation in the air-cells. All the casts joined in the right bronchus. The tubes in the very lowest portion of the lung, which was comparatively healthy, were quite free of contents. The casts were composed of the ordinary material found in an acutely inflamed lung, a delicately fibrillated substance, in which were interspersed a number of granular exudation-cells. The tubes which contained them were perfectly healthy; the mucous membrane showing no traces of inflammation, and not the slightest adhesion existed between the walls and the contents.

The specimen is an example of an exceptional occurrence in pneumonia, but one which occasionally is met with. What its pathological nature or peculiarity is, requires further elucidation. Unless a very accurate statistical account were kept, in which the tubes had been examined in all cases of pneumonia, no positive answer could be given to the question as to the frequency of its occurrence, but probably it would be only met with once in every thirty or forty cases. Is this filling of the tubes with solid lymph accidental, dependent upon a peculiar condition of the mucous membrane of the tubes themselves, or a mere excess of the inflammatory process, or has it a peculiar pathological significance? It is tolerably certain from the healthy condition of the bronchial membrane, that the exudation does not occur from it, and therefore that the affection is in no way allied to that of plastic bronchitis; but that either from a superabundance of inflammatory material, or from the rapidity with which it is poured forth, the material thrown out in the air-cells passes quickly into the tubes, and there coagulates. Dr. Wilks, in a large number of dissections of pneumonic lungs at Guy's Hospital, had only met with five instances, of which the present was the last,—one had occurred during the same month, another two years before, and the others were anterior to this. In the first two cases the patients were otherwise diseased, having both of them granular kidneys. The other cases had occurred during a period when pneumonia of a low form had been rife, and when an epidemic influence had been believed by many to exist. From these few examples, then, the disease would be looked upon as one of an asthenic cha-

racter, due either to an individual peculiarity of the patient himself, or to an external atmospheric influence. Such an opinion is not contra-indicated by our knowledge of other cases where there is a tendency to the deposit of fibrin or solid material from the blood. How great this disposition was in the present instance may be shown from the fact that the difference in weight between the two lungs amounts to four pounds and a half. Thus this large amount of material, of which a great part was solid, had been delivered up by the blood within the short space of seven days.

A very important practical point connected with this complete filling of the tubes, is the total absence of bronchial sounds which necessarily results from that condition.

ART. 48.—*The Cracked-pot Sound not always indicative of a cavern.* By Dr. J. HUGHES BENNETT.

(*Edinburgh Monthly Journal*, Feb. 1855.)

Dr. Bennett speaks as follows in a clinical lecture upon a patient named M'Kay :

"According to Skoda, 'the cracked-pot sound is heard in the thorax, over tolerably large and superficially situated cavities which contain air, and communicate with the bronchial tubes. When the percussion is forcible, or the thoracic walls flexible, the cavity is compressed at each stroke, and a portion of air suddenly driven out of it into the bronchial tubes: this hissing murmur, caused by the escaping air, is mixed up with the ordinary percussion-sound of cavities, and this compound represents the cracked-pot sound.' But the observation made in the case of M'Kay, has satisfied me that occasionally distinct cracked-pot sound may be elicited over condensed lung, without any cavity whatever. In referring to an excellent paper on this subject by Dr. Markham, I find that on one occasion both he and Dr. Sibson have noticed this phenomenon, over the upper portion of a lung which was afterward shown to be gorged with blood and serum, though still retaining some portion of air. It would seem, from what has been said by Skoda, Stokes, Walshe, as well as by Dr. Markham, that a peculiar tympanitic sound may be heard over collapsed or condensed lungs, when covered or mingled with a certain amount of air. For instance, when in cases of pleuritic exudation, air is effused into the pleura, a few hours before death, when in certain cases of pneumonia there is also emphysema, &c. In the case I have alluded to, these conditions were so far fulfilled, that the tubercular mass described was surrounded by spongy lung full of air. At all events, it must be evident that the physical conditions on which this peculiar sound depends, require more careful study, and that our ideas as to its necessary connection with a cavity, must undergo modification."

ART. 49.—*On the transmission of sounds from the root of the Bronchi to distant parts of the Thorax.* By M. BARTHEZ.

(*L'Union Médicale*, No. 67, 1855; and *Medical Times and Gazette*, Aug. 25, 1855.)

Although in the majority of cases an abnormal sound may be said to indicate lesion of the part of the lung placed under the ear that perceives it, there are some cases in which such sound is transmitted from a more distant point. It is the object of M. Barthez' memoir to indicate some of the anatomical conditions favorable to such transmission, so as to guard against the diagnostical and therapeutical errors that may arise from ignorance of their existence. He refers to a case in which phthisis was declared to exist, inasmuch as repeated examination had detected cavernous respiration and gargouillement at the apex; but after death no cavity could be found, but only a pleuritic effusion that thoracentesis might perhaps have relieved.

When a solid body replaces a portion of the lung, it may become the conductor of sounds produced in the trachea or the bronchi, providing that it be in contact with the point of the chest opposite to the ear, and also in immediate contact with the large air-tubes. Tubercular bronchial glands, united or not to tubercle or other induration of the lungs, are the most common of these causes,

as insisted upon already by the author, and M. Rilliet, in their great work on the "Diseases of Children." Another point advanced in the same work is that fluids effused into the pleura may become the means of such transmission. Bronchial respiration is then very frequent, while cavernous respiration, gargouillement, and amphoric respiration are by no means rare, and may deceive the most experienced stethoscopists. As the result of more matured experience, he now wishes to show: 1. That the presence of fluid in the pleura influences these symptoms; their existence and seat varying according to its amount. 2. That the presence of a coexistent solid body is favorable, and perhaps indispensable, to the transmission of the sounds. 3. That nevertheless the sounds so perceived are conducted by the fluid, which may even exaggerate them and impart to them a special *timbre*.

In all the cases in which the author has made an autopsy, there has been co-existence of effusion and a solid body, sometimes a chronic induration of the lung, maintained by partial adhesions, sometimes a pneumonia, at others tubercles or glands united to a mass of tubercular lung, and finally aneurism of the aorta. He is disposed to believe that the sole effect of the foreign body is, usually, the establishment of a continuity of vibrating tissue between the air-tubes and the fluid. Thus, 1. When solid bodies alone transmit tracheal sounds the phenomenon is perceived only at the root of the bronchi, in the supra-spinal fossa, and rarely below the clavicle, i. e. over a restricted portion of the chest. When there is pleurisy with effusion, on the other hand, the tracheal sounds may be heard over the whole of the upper part of the chest, frequently in the infra-spinal fossa, and sometimes at the base of the thorax, almost always over a considerable space. 2. When the fluid is absorbed, we may often perceive the rubbing sound at the point where the cavernous or amphoric respiration was at first audible. 3. The autopsy exhibits the fluid at the level of the points where the transmitted sounds were audible, and sometimes where they manifested the greatest intensity. 4. The passage of sonorous waves through the liquid may exaggerate them and modify their *timbre*. A solid body alone never induces that variety of respiratory sounds which resembles the amphoric respiration. But, whatever name may be given to these pleuritic sounds according to their intensity, or rather according as they simulate bronchial, cavernous, or amphoric respiration, they possess a special *timbre*, which a little habit prevents our confounding with sounds produced immediately under the ear. The difference is analogous to that prevailing between bronchophony and ægophony; and for all such sounds M. Barthez proposes the term *hydric*, as indicative of their having traversed a liquid. It is in auscultation what the special sound indicated by Skoda (and which often exists at the apex of the chest in pleurisy) is in percussion. This comparison between these two sounds is quite justified by their frequent coincidence. In a considerable number of patients the two have arisen, progressed, and disappeared, almost simultaneously, and, therefore, they probably depend upon the same anatomical conditions. The transmission of the sounds is easiest in a small and narrow thorax, with thin and dry parietes, and during exaggerated respiration.

(C) CONCERNING THE CIRCULATORY SYSTEM.

ART. 50.—*Paracentesis of the Pericardium*. By M. JOBERT.

(*Gaz. des Hôpitaux*, Feb. 8, 1855.)

This case occurred in the wards of M. Trousseau, in the Hôtel Dieu, and the result was successful.

CASE.—The subject was a young man æt. 16; pale, debilitated, suffering with intense dyspnoea, and considerable dulness in the precordial region, which extended from the second rib above and to the right of the sternum, being six and a half inches in length by seven in width, with marked prominence of the left side of the chest. Under the use of digitalis and blisters the effusion continued increasing till the dulness reached the clavicle, the patient becoming daily more emaciated and feeble. As death appeared imminent, puncture of

the pericardium was determined on. An incision was made in the fifth intercostal space, an inch from the left border of the sternum, involving the skin and cellular tissue. A trocar was plunged obliquely from within outwards across the intercostal muscles, and was made to penetrate slowly and by a continued movement into the cavity, when the stem was withdrawn and from the canula escaped a little brown serum. The canula left in the wound was agitated by the pulsations of the heart, and raised by each contraction. The canula was left in for one hour and a half, and thirteen ounces of serum escaped. The distressing symptoms disappeared after the operation; the respiration was quiet; pulse good, full one hundred and thirty-four; dullness diminished three inches below the clavicle. The improvement progressed for some days, when an effusion in the left pleura was found rapidly increasing, which became so grave as to require an operation for its removal. The trocar was first plunged in the intercostal space on a level with the axilla, but meeting with a very resistant false membrane no fluid escaped. A second puncture, made a little lower down and more posteriorly, evacuated a pint of fluid. The operation was not followed by any accident. Neither the effusion into the pleura nor pericardium had been reproduced when the patient left the hospital, one month after the operation.

ART. 51.—*Affection of the Heart, Thyroid Gland, and Eyeballs.* By (1) MM. ROMBERG and HENOCH, and (2) Dr. JOHN T. BANKS.

1. (*Klin. Wahrnehm. u. Beobachtungen*; and *Ed. Mon. and Surg. Journ.*, April, 1855.)
2. (*Dublin Hospital Gazette*, June 1, 1855.)

(1) This disease, to which attention has been drawn by Marsh, Begbie, Cooper, &c., in Great Britain, seems also to be well known in Germany, and many examples of it have been observed by Pauli, Brueck, Basedow, and lastly by the authors whose interesting paper we have now before us—Romberg and Henoch. Though differing in regard to the etiology of the disease as a whole, and disagreeing to a certain extent in the account given of the rise and occasion of its individual symptoms; still, in the descriptions of all the writers now named, there exists so remarkable a uniformity, as to satisfy us of the identity of the disease which each has observed.

We shall, in the first place, make our readers acquainted with some of the cases in an abridged form, and the remarks of Romberg and Henoch, and then add a few observations of our own, which the perusal of the former have called forth.

CASE 1.—A. S., æt. 14, who had never menstruated, was treated, in the clinical ward, for anæmia, and cured by a preparation of iron. In October, 1849, she again became a patient, her former disease having returned. At that time, the extraordinary paleness of her skin revealed her anæmic condition. The right lobe of the thyroid was swollen, and the jugular vessels were seen pulsating. The anæmic sound was clearly audible in the neck. There was the evidence of an enlargement of the heart, and its first sound was at the base accompanied by a bellows' murmur. The patient suffered from dyspnœa, increased by motion and from great weariness. The bowels were irregular. On the 12th November she was ordered to take iron, which, with a short interruption, she continued to do till January, 1850. At that date, a decided improvement in her whole system was visible.

CASE 2.—A girl, æt. 18, who had first menstruated a year previously, began to complain of violent palpitation and uneasiness in the region of the heart, brought on chiefly by exertion, especially in ascending stairs. At the same time, a swelling had appeared in the front of the neck, and at times she expectorated blood. The diagnosis, after examination of the heart, was that something more than functional disorder existed, and that valvular disease was present. In this patient, as in the former one, the enlargement of the thyroid and the affection of the heart existed, but the eyes were not implicated. She differed from the former case in not presenting an anæmic appearance.

CASE 3.—Mrs. R., æt. 47, subject for many years to numerous hysterical complaints, was admitted into the Clinic, May 18th, 1849. She complained especially of violent palpitation of the heart, and consequent agitation. During the

attacks of palpitation she experienced a feeling of tightness in the throat, and a glimmering before the eyes. The thyroid was evidently enlarged, particularly in its right lobe, and in it she experienced a sense of pulsation and of pain during the occurrence of the palpitation. Then, also, the eyes became unusually large, and appeared starting from their sockets in such a manner as to expose her to the laughter of bystanders. The catamenia were regular but scanty. The pulsations of the heart were increased to 100 in the minute, but otherwise there was no change detected. She was hysterical, suffered from weariness and from irritability of temper, with inclination to weep. Although the symptoms had existed for nearly two years, they had considerably increased during the previous four months. In this patient the manifestation of anæmia was very clear. A mixture of digitalis, with phosphoric acid and valerian, were the remedial means employed, and amendment was so speedy that in July of the same year she was able to take a situation as lady's maid, and went to Dobberan, where she experienced great benefit from the use of the sea baths. In March, 1850, she was seen entirely freed from her former ailments.

CASE 4.—C. L., æt. 20, first menstruated at the age of thirteen, and suffered thereafter from complete amenorrhœa for a whole year. During this period she had a trifling swelling on the front of the neck. Menstruation again returned, but very irregularly; and the girl, from being blooming and robust, became pale and weak; the thyroid swelling increased; palpitation of the heart succeeded, and then followed a strange largeness of the eyes. Considerable benefit was obtained in this case from the steady use of iron.

CASE 5.—Mrs. B., æt. 25, presented herself at the Clinic on July 7th, 1848. Always healthy, and having regularly menstruated. She had for three weeks been occasionally exposed to a draught, when washing, with her neck uncovered. She had felt pain in the front of the neck, and had latterly noticed a slight swelling in the situation of the thyroid. On examination at the Clinic, the same remarkable prominence of the eyes as noticed in the other cases was observed, still the sight was not affected. Violent exercise of the heart existed; and in the thyroidal tumor, now greatly increased, and very large, as also in the head, the pulsation was inordinate. The pulse was 144. Three cups of blood were taken, and in the following week leeches were applied to the enlarged thyroid; from these measures an evident, though temporary, amelioration followed. Afterwards (early in 1850), from the use of digitalis, and due in great measure to the regular return of the menses, which had been much interrupted, restoration to sound health occurred.

CASE 6.—A. B., a young girl, æt. 17, had suffered from violent palpitations for two years; had also an attack of typhus fever, and had been neglected, owing to living in a country village. Was admitted into the Clinic, November, 1847, when her appearance was most striking. The eyes were protruded; the sight, however, unaffected. The thyroid was greatly enlarged, and appeared throbbing; a loud systolic murmur was heard, and peculiar thrill felt over it. In this case, the occurrence of the palpitation was evidently followed by increase in the size of both thyroid and eyes. Pulse equal and regular—116. Bloodletting was adopted three times in the treatment of this case, and after a little time a leech was applied every fourth day to the enlarged thyroid; as in the former case, a temporary benefit resulted. The girl appears to have ultimately fallen a victim to tubercular disease in the chest, surviving the time of her first illness for nearly three years.

Taking the cases which have occurred in their own experience, and those which have been elsewhere recorded, there are in all twenty-seven which form the subject of the following interesting remarks by Drs. Romberg and Henoch. They acknowledge twenty-seven to be too small a number of observations to warrant any very decided opinions being drawn from them, but, at the same time, believe it sufficiently large to afford the groundwork for much useful study. By far the larger number of the patients were females, only four of the twenty-seven were males. All with one exception were young, the most common age being between twenty and thirty. In the larger number of cases there existed the combination of the three symptoms of palpitation of the heart—enlargement of the thyroid and prominence of the eye; while in six of the twenty-seven

cases one or other of the three was absent. In the two cases first treated by Dr. Romberg in the Clinic, the prominence of the eyes was not observable. Undoubtedly of these phenomena the palpitation of the heart is the one best understood, and corresponds most readily with the view taken of the whole disease. Almost always the cardiac symptoms are those first discovered and first complained of; then, after a longer or shorter period, the swelling in the neck commences, and the prominence in the eyes follows. Only a few of the recorded cases lead to the supposition that the three diseased appearances arose at about the same time, certainly in the fifth case treated in the Clinic the enlarged thyroid was the first symptom noticed. It is well to inquire wherein the original affection of the heart consists. That in some instances there exists organic disease is proved as well by examination during life as by post-mortem examination (Basedow and Marsh); but, again, in others it is equally certain that the cardiac symptoms depend merely on an increased irritability of the organ (Cooper, Begbie, Lubarsch). Cases explicable on both these grounds, and on these only, have been treated by the Clinic. In regard to the thyroïdal swelling, it is interesting to note its increase and subsidence after the violence of the cardiac palpitation—this fact is expressly stated by Sir Henry Marsh, and mentioned by Begbie as existing in his third case, and also noticeable at times in the fourth; this, of course, points to an intimate relation between the two symptoms. Marsh and Heusinger describe the condition of the thyroid as a true hypertrophy, and it has been noticed by Graves that, after the lapse of years, the consistence of the gland has been much increased.

As regards the remarkable prominence of the eyes, this symptom comes on gradually, and so far as vision is concerned it is not of much importance, seeing that only in one case (Lubarsch) was it at all seriously impaired; but, though sight is not much affected, the prominence of the eyes produces a singular disfigurement, causing the sufferer to be not unfrequently avoided in company. Acknowledging the great difficulty of determining upon what peculiar condition the prominence of the eyes depends, our authors set aside the view of the increase of the aqueous humor causing a true enlargement of the eye (Begbie—the theory also adopted by Dr. Stokes), also that which attempts a solution by reference to an hypertrophy of the post-ocular cellular tissue (Basedow). They look upon the idea of the prominence being due to a want of tone in the ocular muscles, and an accompanying congestion in the posterior parts of the eye (Cooper, Dalrymple) as more likely; but they appear to think still more favorably of the view of Heusinger, who found in two cases an extraordinary accumulation of fat in the cellular tissue behind the eyes, and regards it as the probable cause of the exophthalmos.

Again, regarding the disease as a whole, our authors proceed to remark that certainly the larger number of the individuals so affected exhibited evident symptoms of anæmia, such as a remarkable paleness of the skin, the peculiar sound audible in the bloodvessels of the neck; headaches, often very violent; giddiness, especially when in the upright posture; humming sound in the ears; attacks of fainting; small, frequent pulse, &c. Irregularity of the catamenia also is commonly present, while fluor albus, and sometimes complete amenorrhœa, have been found. Symptoms of an hysterical nature further distinguished not a few of the cases, the globus hystericus, neuralgic pains in different parts, coldness of the extremities, and strange wanderings of the mind. Basedow describes a remarkable calmness and a great desire for pleasure as characteristic features of the mental condition. In some of the cases it is clear that if the disease was not originated, at all events it was furthered by the occurrence of a severe hemorrhage or flux, which reduced the system (Begbie); also a depressed state of both body and mind seemed connected with its first occurrence (Graves). But though anæmia was present in a large number of the cases, there are others whose commencement could not be traced to it, and anæmia cannot therefore be regarded as an essential requisite towards the explanation of the complex phenomena. The irregularity of the uterine system, too, cannot be regarded as altogether explanatory of the disease; for, independently of males being subject to it, these uterine derangements, though marked, were of very varying

nature. Heusinger directs attention to the condition of the spleen, which he found after death much increased in volume and manifestly diseased.

(2) The case by Dr. Banks is valuable, in having the appearances after death as well as the symptoms during life.

CASE.—The subject of this case, a woman, æt. 30, was admitted into Whitworth Hospital, January 25th, 1855. Her health had been good up to the age of fifteen, and no hereditary taint was discoverable. About the age of puberty she suffered much mental disquietude, from which she has never since been altogether exempt. She does not remember the exact period when the catamenial function was established; it had always been irregular, and for the last year and a half had ceased altogether, having been suddenly arrested in the midst of a period. She has always been nervous and subject to palpitations of the heart. Every winter for the last few years has had bronchitis; some time since she suffered from a fit of violent vomiting and straining, and after this she perceived that her neck was swelled, and she felt a sensation of throbbing in it. Of late she has been much distressed by palpitations and pulsations in the neck, and a feeling as if she were being choked by something drawn tightly round her throat; for the last ten nights she has been almost sleepless, and utterly unable to lie down.

On admission she presented the following appearance:—Wild, agitated expression of countenance; dusky hue of skin; eyes unnaturally prominent, staring, and brilliant; evident enlargement of the thyroid gland, more particularly of the right lobe; violent throbbing of the vessels of the neck, which were considerably augmented in size; one large superficial vein crossed the trachea.

The thyroid, permanently enlarged, becomes much more turgid on the occurrence of palpitation of the heart, or paroxysms of coughing; a purring thrill, a loud continuous venous murmur, and an interrupted arterial sound are present.

The area of precordial dulness is increased; the heart's action is tremulous and irregular in the extreme; a few unequal beats of extraordinary rapidity, and then a brief pause. No murmur was distinctly audible.

The pulse is small, feeble, and unequal, and so rapid as to render it almost impossible to calculate its frequency; the countenance indicates great suffering. She says her chief distress arises from inability to lie down, or to sleep quietly, from a "feel as if her heart was in her throat." She also complains of headache and frequent cough; during the fits of coughing, her urine passes away involuntarily. With the exception of bronchitic râles, nothing abnormal was found by auscultation of the lungs. The heart's sounds were more extensively audible than is usual in health.

From the date of admission, January 25th to February 6th, no marked change in condition of patient; at the latter date, œdema of the lower extremities, and a slight puffiness above the eyes, were observed. Greater respiratory distress; restlessness and mental disquietude. The size of the thyroid is rather greater than when first seen; position has a remarkable effect on the pulsation: on assuming the recumbent posture, which always causes dyspnoea, the throbbing of the vessels visibly diminishes, and the murmurs become almost inaudible. The urine is of a dark smoky color, albuminous, and depositing a sediment which, on examination, was found to consist of broken-down blood-globules, sp. gr. 1.017. The heart's sounds more regular.

From this time the patient rapidly declined in strength; the œdema extended almost over the whole body; the cellular tissue of the back was the seat of extensive effusion; inability to sit up from weakness, and she says from the weight of her head, and giddiness. Still the pulse remains more regular (96). The character of the urine unchanged.

For the last week of life intense bronchitic râles were heard, and there was an abundant expectoration of a bloody fluid, not viscid.

It should have been remarked that the vision was perfect up to the close of life. There never was the slightest inflammatory affection of the eyes. Death, which occurred on the 7th March, was rather sudden. She had been speaking a few minutes before, and so free from struggle were her last moments, that those near her did not know exactly the moment of her death.

The morbid appearances presented on examination were in many respects interesting.

The thyroid gland, enlarged to four or five times its natural size, was found to cover, to a considerable extent, the front of the trachea. The right lobe was larger than the left, the thyroid veins were remarkably dilated.

The gland was dense, very solid to the feel, and lobulated. A section of different parts disclosed the existence of numerous cysts, containing a yellow fluid like honey. The contents of some of the cysts were dark colored, and resembled coagulated blood. The microscopic appearances were similar to those observed and figured by Rokitsansky in ordinary enlargement of the thyroid. The jugular veins were enlarged; the bronchial glands were found of an unusually large size; the heart was enlarged generally and the cavities dilated, but not to any considerable extent.

The heart was as large as that of an ordinary man, the subject being a woman under the middle size; the valves were free from disease, with the exception of slight thickening of the anterior edge of the mitral valve.

The lungs were highly congested, and the bronchial membrane bore the marks of intense inflammation.

The liver appeared as if in the earliest stage of cirrhosis; the spleen large and congested.

The brain softer than natural; the lining membrane of the ventricles much thicker than usual.

The kidneys had undergone the changes usually observed in the early stage of Bright's disease.

ART. 52.—*Remarks on Cardiac Disease.* By Dr. SEMPLE.

(*Medical Times and Gazette*, July 7, 1855.)

The following practical remarks upon the moral management of cases of cardiac disease, especially as affecting the valves, occur in a paper relating the case of a medical man who had long had valvular disease of the heart, with fatty degeneration, and who died from other causes at an advanced age:

"With regard to the moral management of such cases, I am strongly of opinion that too much importance ought not to be attached to the presence of cardiac murmurs in forming a prognosis. In a paper which I communicated to the Medical Society of London in the year 1850, I ventured to broach the somewhat heretical doctrine that disease of the heart, even affecting the valves, was not so certainly or prematurely fatal as was generally supposed, and among other cases I then adduced was the instance of an old woman who died of mere old age at the age of eighty-three, and in whom I was fully aware of the existence of extensive valvular disease for ten years before death. If, therefore, we should detect a valvular murmur in one of our patients, I do not see the necessity of at once proclaiming the fact, inasmuch as the fatal news communicated to the sufferer might tend to hasten the very event which it should be our duty to avert; and inasmuch also, as valvular disease may proceed to a very great extent without materially shortening the period of human life, or causing much suffering. I cannot forget the instance of an estimable member of our own profession, who, having been informed of the existence of a slight valvular murmur in his heart, poisoned himself immediately after receiving the melancholy intelligence. In the case which is the subject of the present paper, the patient had in some manner become acquainted with the fact of the existence of a slight valvular murmur; and as he was much given to hypochondriasis, and would lie awake for nights together brooding over his own symptoms, I am aware that the knowledge of this murmur gave him very great and perhaps unnecessary uneasiness. I frequently endeavored to comfort him by assuring him that the murmur was due to arterial degeneration, from which few persons of his years were exempt, and that the disease was not incompatible with the continuation of life or the enjoyment of moderate health. In effect, although laboring under fatty degeneration and valvular disease of the heart, which had probably existed for many years, he never suffered from any of the rational symptoms which are usually

said to indicate those affections, and he died at a good old age, from an attack of bronchitis following a cold."

ART. 53.—*On protracted Valvular Disease.* By Dr. CORSON.

(*New York Journal of Medicine*, May, 1855.)

Dr. Corson arrives at the following conclusions, after a very careful analysis of forty-one cases of protracted valvular disease, which have fallen under his care :

1. That in protracted valvular diseases, aortic lesions are twice as numerous as any other lesions; aortic obstruction alone and aortic obstruction with regurgitation, nearly equally divided, forming about one half; mitral regurgitation, nearly one fourth; aortic and mitral combined, one sixth; and simple or complicated affections of the right valves, about one-eighth.

2. That owing to the excess of three males to one female in the large aortic class, two-thirds of the whole were males; and that the average age of the whole, rejecting fractions, was thirty-nine years; of the aortic alone, forty years, and of the mitral alone, thirty-two years.

3. That in both ability for exertion and duration, the aortic on the whole excelled; each being greatest with either slight aortic obstruction or limited stationary mitral regurgitation, with the *least hypertrophy*; enlargement being best endured in the aortic class; and that the average duration of the forty-one cases reached the extraordinary term of nine years; nine with aortic obstruction averaging ten and a half years; eight with aortic obstruction and regurgitation, eight and a quarter years; seven of aortic and mitral combined being ten years; and three of right and left valves simultaneously, being four years.

4. That of twenty-nine cases in which the causes were mentioned, twenty, or about two-thirds, were from rheumatism, four from pneumonia, or pleurisy, and none from Bright's disease.

5. That the *aortic* differed from the mitral in having, more often, florid face, bright protuberant eye, jerking, thrilling, or firm pulse, precordial bulging and pain, strong impulse, harsh grating or sawing murmurs, *always sternal*, more frequent and large hypertrophy, and more cerebral complications; while the *mitral*, on the contrary, were more liable to a livid or puffy face, softer, smaller and more intermittent pulse, feebler impulse, more liquid murmurs *always apical*; less hypertrophy, and more frequent pulmonary complications and dropsy.

6. That in *prognosis*, from their presence or absence in these cases, were variously rated, with some exceptions, the following characteristics: *most favorable*, slight *aortic obstruction* or limited stationary mitral regurgitation with little or no *hypertrophy*, a natural or florid face, and a healthy easy avocation; *less favorable*, aortic obstruction and regurgitation, or *free* mitral regurgitation with large hypertrophy, excessive pulmonary congestion or dropsy, and an unhealthy straining or anxious avocation; *unfavorable*, mitral obstruction, tricuspid with left valvular lesions, or disease of any two sets of valves sufficient to produce murmurs from both during life; Bright's kidney, a livid or cachectic face, or enlarged liver.

7. That eleven cases at the time reported were still living; and that of the thirty fatal cases only seven—all purely or mainly aortic—were mentioned as dying "suddenly;" while sixteen, principally mitral, "sank gradually;" and that in the thirty post-mortem examinations, beginning with the most frequent, there were found the following cardiac pathological changes: hypertrophy with dilatation, ossific deposits or calcification, adherent pericardium, valvular thickening, cartilaginous induration, and vegetations.

8. That in the treatment of *protracted* valvular disease, we must avoid, as far as possible, thwarting the restorative operations of nature, by depressing with bleeding or digitalis; these, when required by dangerous complications or secondary inflammations, being used cautiously, as in phthisis, and on account of less liability to fatal syncope, being best borne in mitral disease with sufficient impulse; that many cases only require careful regimen for years; that allowing a certain excess above the natural standard to carry on the embarrassed circulation, the *impulse is the true pulse of the heart*, indicating, especially when

feeble, the need of support; that when any interference is necessary, tonic and soothing remedies are far the most frequently required; and that the most valuable tonics to sustain a failing heart are, first, *strychnia* or *nux-vomica*, in from one-fourth to one-third the usual minute doses long-continued, and next, preparations of iron, with mild sedatives and bitters.

ART. 54.—*Curious case of Vascular Disease.* By Dr. GULL, Assistant-Physician to Guy's Hospital.

(*Guy's Hospital Reports*, 1855.)

It seems scarcely credible that a person should live in the enjoyment of her faculties, and in comparative health, with all the main arteries of the head and neck, except the left subclavian, closed at their origin from the arch of the aorta. Yet such was the condition in the following case. It illustrates the perfection of the arterial anastomoses of these parts, and may be adduced as a striking instance of that law of conservatism and compensation which prevails throughout the whole organism, but is rarely exemplified so plainly as in the conditions of the vascular system.

CASE.—Mrs. P—, æt. 41, a stout woman of the middle stature, always had good health until the autumn of 1852. She was at that time living near the Bankside, Southwark, and in consequence of a high tide overflowing the lower part of the house, made great exertions to save her furniture, and was exposed to wet and cold for some hours. This was followed by an affection of the chest, and with difficulty of breathing, which never entirely left her. Her general health also became perceptibly impaired, and she was troubled with flatulence, tinnitus aurium, and a sense of pulsation at the back of the head, at times very violent. For these symptoms she took various medicines without relief. On the 2d of August, 1853, Mr. Stedman, of Union Street, Borough, who has kindly furnished me with the particulars of the case, was called to see her for the pain in the head, which she said was such as almost to drive her mad.

On examining her he found the pulse at the wrist on the right side, and in the carotids indistinct. A soft systolic murmur was audible over the ascending portion of the arch. Bowels torpid. Urine normal.

On the following day she suddenly lost the use of the left side. At the time of the seizure there was no loss of consciousness, and the speech was but slightly affected. After a few days the power began to return in the paralyzed parts, and the face recovered its natural expression. I was requested by Mr. Stedman to see her on the 25th of September, on account of the severity of the pain in the head. On examining the heart I could not at first hear the systolic murmur in the ascending part of the aorta, to which my attention was directed; but on changing the position of the patient over to the right side, it at once became audible. There was no pulse at the right wrist, none in the right carotid, and but a feeble one in the left. The head symptoms were considered to be due to softening, from defective nutrition, and quinine was accordingly prescribed, in the dose of six grains, in a pill, every morning. The immediate effect was a marked diminution of the pain: but on the 2d of October it again became aggravated.

By time, and by the use of various gentle remedies and sedatives, regard being had to the nature of the lesion in the brain, she slowly recovered, and, except some degree of weakness in the left arm and leg, was in her usual health. She was unable to take much exercise, and often complained of drowsiness. On the 11th of April, 1854, she had a second apoplectic seizure, and so suddenly that she fell into the fire and was rather severely burnt. The insensibility lasted but a few minutes. A week after she had a third seizure, and remained comatose until she died at the end of four days. There were premonitory symptoms of vertigo, &c., for half an hour preceding this fatal attack.

Post-mortem examination.—Integuments loaded with fat, on the abdomen more than an inch in thickness. The left arm slightly less in circumference than the right. Heart normal in structure, but rather small. Arch of aorta dilated, and to some extent sacculated; internal surface irregular from atheromatous deposit and puckering; middle coat irregularly thickened. The openings of the inno-

minata and left carotid totally obstructed, their position indicated only by indented cicatrices. This obliteration of the vessels at their origin was caused by a fibrous structure, incorporated with the lining membrane and inner layers of the middle coat, and extending upwards but a short distance, beyond which the vessels had their normal size and structure. The opening of the left subclavian (the only pervious trunk from the arch) was rather dilated; the vessel in other respects healthy. The right vertebral was small; the other vessels of the head and neck normal, as far as could be ascertained; but a complete dissection was not possible under the circumstances in which the examination was made.

The pericranium was loaded with fat. The calvaria was remarkably thin, and the bones without diploe. Arachnoid transparent. No sub-arachnoid effusion. On opening the lateral ventricles, the right corpus striatum was found to be much wasted and of an ochrey tint. On section, a large irregular cyst was seen in the outer nucleus of gray matter, and a smaller one in the inner, the intervening line of white substance being intact. The optic thalamus on this side was healthy. On the left side the anterior cerebral lobe and the anterior half of the middle lobe were in a state of recent softening, extending inwards so as to implicate the greater part of the corpus striatum, and the outer two-thirds of the optic thalamus on this side. The softened brain had lost its transparency, and in it were found a few "granule cells," and some irregular aggregations of oil globules, either scattered amongst the nervous substance or coating the smaller arteries, and producing an appearance apt to be mistaken for fatty degeneration of the vessels themselves. There were no traces of effused blood. The crura cerebri, pons varolii, and medulla oblongata, were small, but healthy. The cerebellum free from disease. The carotid trunks, and the other vessels composing the circle of Willis, were remarkably thin, and everywhere free from atheromatous deposit. The right vertebral was very small, the basilar being formed principally by the left.

The descending portion of the thoracic aorta was healthy. The abdominal viscera were not examined.

ART. 55.—*Reduplication of both sounds of the Heart.* By Dr. AUSTIN FLINT.

(*Westr. Jour. of Med. and Surgery*, April, 1855; and *Medico-Chir. Rev.* Oct., 1855.)

"The occurrence of a reduplication of one of the heart's sounds, especially of the first, though not very frequent, is one that most clinical observers have met with. A reduplication of both sounds is so rare, that the following case, which may be regarded as almost unique in the regularity of the phenomena and the completeness of the observation, deserves especial attention."

CASE.—George Nash, æt. 27, boatman, admitted into Louisville Hospital, December 16th, 1853. Excepting an attack of cholera eighteen months previously, he had enjoyed good health till seized with cold and cough six weeks before admission. Cough chiefly at night; soreness under sternum; no hæmoptysis, chills or loss of appetite; bowels regular; never had rheumatism or acute thoracic affection. On admission: aspect not morbid, pulse normal, respiration slightly increased in frequency; skin and tongue normal, appetite good, bowels regular, no thirst, percussion of thorax clear, breathing movements equal on both sides, sibilant inspiration on both sides. Some dyspnœa for a few days, with palpitation from commencement of attack, requiring him to lie with his head raised. The treatment consisted at first in the administration of syrups of ipecacuanha, squills, and tolu, with a little sulphate of morphia.

On December 23d, seven days after admission, the pulse at the wrist was found too quick to be counted, "but the carotids can be felt and, enumerating in this situation, counting at the same time the heart-sounds, the number of ventricular contractions per minute is one hundred and sixty." No œdema or ascites. Chest well developed. No apex impulse of heart; a feeble diffused impulse felt just below the nipple, and both seen and felt at the epigastrium; no heaving of the chest; the heart-sounds succeed each other so rapidly that it is difficult to state them, but they appear pure, and the first sound is shorter than natural.

On the 24th, the absence of pulsation in the jugular vein is noted.

On the 28th, Dr. Flint says: "On examination of this patient yesterday, I found a feeble vibratory pulse at the wrist, numbering eighty per minute. I counted it repeatedly, with similar results; on counting the heart-sounds, I found them apparently one hundred and sixty-six beats—i. e. tic-tacs, per minute. I repeated the comparison of the heart-sounds several times with the same results. To-day I find the same contrast—viz., pulse eighty, and two heart-sounds repeated one hundred and sixty times per minute. Dr. Dickinson counted, without knowing the results of my enumerations, with similar results." The same ratio was observed by Dr. Hardin, on the 31st; by Dr. John Clark, on January 1st, and also on the 3d and 13th.

On the 3d, a faint, short, sharp bruit was noted below the pectoral muscle, with the systole at the right and left apex, but not at the base.

On the 13th, a bruit, supposed to be endocardial, accompanied the systole, uniformly higher in pitch than the whispered word *who*, and nearly as high as *R*.

On the 25th, œdema supervened, and the dyspnoea became more urgent. The bitartrate of potash, followed by the exhibition of Epsom salts, relieved the dropsy; and

On February 14th, the patient was discharged feeling quite well; able to sleep in the recumbent posture, without dyspnoea on taking exercise; no cough, pain, or palpitation. "*The pulse and the two sounds of the heart are eighty-four per minute.*" Marked dulness on percussion was observed to the left of the nipple. No point of apex impulse was seen or felt, but a very feeble impulse is appreciable over an area about two inches in diameter. No bruit heard." He left the hospital, and undertook severe work, without experiencing any inconvenience; and when Dr. Flint saw him again, on April 12th, the pulse at the wrist, and the ventricular contractions, were eighty-four each per minute; the sounds of the heart were pure, no apex impulse was appreciable, the dulness on percussion extended an inch to the left of the nipple, and the general health was good. He was again seen by Dr. Flint, in February, 1855, when he continued well, and no physical evidences of heart disease were found, save that the area of dulness was somewhat increased.

"In considering the causes of the phenomena in this case, Dr. Flint suggests two theories—either that the heart beat in the usual manner, but that, from the weakness of every alternate beat, that was not represented by a corresponding dilatation of the radial artery; or that the reduplication was owing to a want of synchronism between the contraction of each ventricle: each ventricle, as it were, asserting its independence by separate action. Want of synchronism between the ventricles is the cause to which Dr. Williams and Skoda attribute the reduplication of the first sound alone, and it is difficult to assume any other view in reference to Dr. Flint's case: he himself does not express himself decidedly in favor of one or the other, although he inclines to the theory of synchronism. He remarks, that a fact which would be incompatible with it was, that the beats in the carotid artery were equal to that of the heart. 'It is indeed wonderful,' he says, 'that of the halved portions of the systolic contraction of the left ventricle, only one should regularly be accompanied by a radial pulse, but it is, perhaps, quite as difficult to conceive that, in view of the arrangement of the muscular fibres of the heart, the ventricles should contract separately.' The only point that suggests itself is as to the possibility of the peculiarity of the heart's action, whether explicable on the one view or the other, having been determined in the first instance by the remedies employed, and especially by the sulphate of morphia."

ART. 56.—*On perforation of the Septum Cordis.* By M. HAUSKA.

(*Wien Wochenschr.*, No. 9, 1855; and *Medical Times and Gazette*, April 28, 1855.)

Professor Hauska, having had a heart sent him, as furnishing an example of the aorta arising in both ventricles, found, on examination, that the appearance of this being the case arose from the septum of the ventricles having

become perforated. He takes the opportunity to draw attention to an anatomical fact, allusion to which he can nowhere find, viz.: that there is in the normal state a spot in the septum cordis, varying in size from a bean to an almond, entirely destitute of muscular substance; the two chambers being there separated only by the layers of endocardium that line them. Examining the septum from the left, after slitting up the aorta, we may remark a thin diaphanous spot, close under the angle formed by the convex borders of the right and posterior semilunar valves of the aorta, being closed above by a thin muscular bundle, coursing along the contour of the ostium arteriosum sinistrum. In the right ventricle the deprivation of muscular substance, is covered by the end of the tricuspid valve; and so thin is the duplicature of the endocardium, that the lines and markings of the finger held under it can be seen through. M. Hauska observed the appearance himself only a year since; but since then he has found it in every heart (about 300) he has examined, of whatever age or sex.

This appearance is of great interest in a pathological point of view. In endocarditis, the endocardium becomes loosened and friable, and it is not seldom actually torn, as the rupture of the valves and the rapid formation of aneurism of the heart show. If such inflammation happened to attack this spot a communication between the ventricles, by rupture of the endocardium, might easily result. On examining the heart sent him as an example of anomalous origin of the aorta, the ostium arteriosum sinistrum was found directed towards the right, as well as the left ventricle, while the swollen edge of the septum ventriculorum, covered with opaque and thickened endocardium, sloping from before backwards, was carried up to the middle of the orifice of the aorta. This condition necessarily arises as soon as the endocardium closing the aperture is torn. The blood of the right ventricle passes, in gradually increasing quantity, through the new opening, which becomes proportionally enlarged, and, owing to the simultaneous contraction of the two ventricles, the blood does not pass into the left ventricle, but immediately into the aorta, where it becomes mingled with the blood of the left side. This newly established stream of blood from the right ventricle to the aorta, gradually forces the commencing portion of the aorta towards the right, so that at last the ostium arteriosum sinistrum is placed obliquely over the perforated septum, and with its orifice turned towards both ventricles.

ART. 57.—*On the Tic-tac felt by the hand as a means of diagnosis in Disease of the Heart.* By Dr. MELVILLE.

(*American Medical Monthly*, Jan. 1855.)

The various cardiac sounds, natural and morbid, may be easily distinguished by the sense of touch after a little practice, if this sense be of ordinary delicacy; and M. Bouillaud has been in the habit of employing this mode of diagnosis in his practice lately. Dr. Melville's object is to direct attention to this fact, and in doing this he goes into considerable detail. Speaking of the advantages of this mode of diagnosis, he says "as a corroborative method of diagnosis it possesses great advantages and opens up a large and interesting field of investigation to the pathologist. Nor is it without peculiar claims to our consideration, in those cases in which the formality of a stethoscopic examination becomes irksome or alarming to a patient laboring under heart disease; at all times they are anxious, nervous, and easily excited, sometimes prejudicially so, particularly when suspicions may have been awakened that the special form of disease with which they are afflicted is incurable.

"In such cases a preparatory examination by touch may pave the way to the more formidable or repugnant auricular and stethoscopic exploration, or may, if we acquire by practice the dexterity professed by M. Bouillaud, altogether supersede the necessity of the latter."

(D) CONCERNING THE ALIMENTARY CANAL.

ART. 58.—*On tuberculous Peritonitis in Adults.* By Dr. KYBURZ, of Zurich.

(*Schmidt's Jahrb.*, No. 3, 1855.)

In bestowing especial attention upon this disease, hitherto little regarded, the author thinks to fill up a void in special pathology. His deductions are based upon five cases observed by himself; a sixth, furnished by Prof. Lebert, is also a source of reference.

From the consideration of the diagnostic signs of these cases, we see how uncommonly difficult it is to recognize this form of disease at its commencement. The disease begins, according to the author's observations, generally with a chill, which is then sooner or later followed by the abdominal symptoms. When the disease is in its early stage, and the deposition of tubercle consists in scattered granulations upon different parts of the peritoneum, and the latter occupies the superior regions of the abdomen, the belly is puffed up and of a roundish form. If the tuberculosis is propagated from one point (in four cases it was the ileo-cæcal region), the abdomen becomes irregularly distended, and has a doughy and resistant feel. If particular parts are especially involved, various intumescences can be felt, which may readily be confounded with lesions of the spleen, liver, and uterus. In connection with this deposition and progressive development of the disease upon the peritoneum, the most various and opposite symptoms are called forth, to wit, tension of the abdominal walls, prominence of the liver and spleen, so also of the heart, compression of the lungs and dyspnoea; the organs also become pressed downward into the cavities in which they most readily subside; thus the author found in one case the vaginal portion of the uterus crowded down even to the labia. Through the pressure of tubercular degenerated lymphatic glands upon the excretory ducts of the liver, or through pressure of the peritoneal sheets one against the other, since they include the gall-ducts between them, arises the icteric appearance and the accompanying coloration of the stools. Disturbance of the urinary secretion from pressure, is not a rare phenomenon. In one case sciatica originated from pressure upon the nerves. Pressure upon the vessels naturally produces disturbance of the circulation, thence œdema of the feet. If the vena cava becomes compressed, the veins appear swollen upon the distended abdominal walls. In one case coagula had been formed in the veins. The phenomena of vomiting, diarrhoea, or constipation, and loss of appetite, are results of the disturbed action of the organs, partly from pressure, partly from morbid degeneration of the intestinal walls.

In reference to the general symptoms, we can, according to the author, determine the following rules. There is usually a slight febrile condition existing, the pulse even in the morning being over 90 per minute, very often accompanied with colliquative sweats. We observe in the patient a progressive emaciation and loss of strength, as well as an alteration of the color of the face, but rather paleness with circumscribed redness of the cheeks than the straw-yellow color peculiar to carcinomatous affections.

The shortest duration of the disease was four weeks, the longest six to seven months. The issue in five cases was fatal; only a single patient left the hospital in a satisfactory condition, and the author doubts whether he was really cured. Death followed from gradual wasting, or from the occurrence of various complications. Ulcerations of the intestine were observed only in one case, perforation in none.

The treatment was the same as in every other form of tuberculosis, the administration of cod-liver oil a long time continued.

ART. 59.—*Curability of Intestinal Perforation in Typhoid Fever.* By Dr. WOOD.

(*Philadelphia Medical Examiner*, April, 1855.)

The case which is here related occurred in the Pennsylvania Hospital under Dr. Wood's care, and it was thought of sufficient importance to be brought before the College of Physicians in Philadelphia.

T. C., a young man, about twenty-three years old, was admitted into the hospital on the 21st of November. His friends stated that, three weeks before his admission, he had been attacked with a chill, and had been unwell ever since. At the time of his entrance, he had all the characteristic symptoms of typhoid fever in its advanced stage; among them, a pulse of 128 in the minute and very feeble, a perfectly dry tongue, muttering delirium, diarrhoea, and tympanitic abdomen, with the rose-colored spots and tenderness on pressure. There was also cough, with embarrassed respiration and evidences of pulmonary congestion. He was put on the use of oil of turpentine, and small doses of the blue mass, opium, and ipecacuanha, with emollient poultices to his abdomen, dry cups to his chest, and wine-whey, soup, and milk, to support his strength. On the 24th, his tongue had become moist, his abdomen less tumid and tender, and his pulse reduced to 115. So far as the fever was concerned, he seemed on the way to convalescence; but the pectoral symptoms had increased, and pneumonia was decidedly developed. The remedies were continued, with the addition of a large blister to his chest. But the pulmonic affection rapidly gained ground; the respiration was very much oppressed; the skin became cold and clammy, and the pulse extremely feeble; and life was sustained only by the administration of the most active stimulants. He died on the 1st of December, obviously of the disease of his lungs, the abdominal symptoms having almost entirely disappeared.

On examination after death, the upper half of the right lung was found in a complete state of gray hepatization, being everywhere infiltrated with pus, and so soft that the handle of the knife could be passed through it in all directions with very little resistance. The remainder of the right lung, and most of the left, were more or less congested. There could be no doubt as to the cause of his death. I was not present at the examination of the body; and, though the lungs and intestines were kept for my inspection, I had no opportunity of seeing the bowels *in situ*. Dr. Forbes, however, one of the resident physicians of the hospital, who made the autopsy, was kind enough to present me with the following account, in substance, of what he discovered on opening the abdomen.

Evidences of previously existing peritonitis were exhibited in small portions of semi-organized coagulable lymph adhering to the bowel and abdominal parietes, chiefly in the right iliac region, where, at one spot, it served to agglutinate the small intestine to the anterior wall of the abdomen. There was little or no liquid in the cavity, and no fecal matter. The adhesion was carefully separated by the thumb-nail, when a portion of the contents of the bowel escaped into the abdomen at the point of separation. On further examination, a perforation of the intestine was found in the middle of an ulcer, which appeared to be healing at its edges, as were several other ulcerated surfaces.

When exhibited to myself, the intestines were, as already stated, separated from the body, and had been laid open. A considerable number of healing ulcerated surfaces were visible along the ileum, in the situation of the aggregated glands; and, in the middle of one of these ulcers, near the ileo-cæcal valve, was an oval opening, about half an inch in length, quite through the bowel, with a smooth, rounded edge, which had certainly not been produced either by tearing or by the knife. There could not be the least doubt that it was a perforating ulcer. Near its edge, on the peritoneal surface of the bowel, was an adhering layer of semi-organized coagulable lymph, about an inch and a half in diameter, and here and there smaller patches, with some shreds adhering somewhat loosely to the bowel, at a little distance from the surface of adhesion, showing that the inflammation had extended some distance beyond the outer limits of that surface.

Dr. Wood adds:

"The College will, I think, agree with me in the conclusion that here had been a case of peritonitis from perforation, though of no great extent. Before any considerable portion of the intestinal fluid had escaped, adhesion had taken place around the opening by means of the exuded fibrin, and further mischief was thus prevented. The inflammation had probably begun to subside before the patient entered the house; and the 24th may be considered as the commencement of convalescence, so far as the peritonitis was concerned. I pre-

sume that the patient would have recovered, but for the supervention of pneumonia, which, in consequence probably of the general debility and bad state of the blood, passed very rapidly into the third stage, or that of suppurative disorganization."

ART. 60.—*Case of Sarcina Ventriculi.* By Dr. SEATON.
(*Lancet*, May 5, 1855.)

Commenting upon this case, Dr. Seaton observes that it tends to confirm the view taken by Dr. Todd, that the occurrence of sarcinæ in large quantities in yeasty vomiting is indicative of dilatation of the stomach, generally the result of pyloric obstruction, but, after analyzing the published cases of the disorder, he does not think that this symptom is pathognomonic of this lesion. He also says that the case shows very clearly that the sarcinæ may be formed even in large numbers, independently of fermentation.

The patient was a respectable tradesman, aged forty-eight, of moderate height, evidently thinned by disease, though never stout; always of a strong constitution, and never having suffered from any particular disease till the one with which he was now afflicted. He had been married twenty-one years. He was a house-decorator, and had always worked very hard, feeling the better for so doing. His habits were temperate, but he had been irregular with regard to his hours of meals, from devotion to his work; bowels generally regular, or easily regulated. For the last seven or eight years he had felt at times peculiar languor, and this had increased so much during the last two or three, that he had been occasionally obliged to give way to it, and to quit his work and repose for awhile. About eight or nine months ago he first experienced symptoms of derangement of the stomach, manifested by loss of appetite and flatulence, with increase of the general weakness and irregularity of the bowels. After several months there came on acid eructations, occurring almost directly after each meal; and soon after this, vomiting of the food taken, along with a green acid stuff (the words of his description). This occurred at first generally four or five times a day, after each meal; but was somewhat mitigated by medical treatment, and, at length, about a fortnight ago, sank to about once a day, mostly in the evening. On some days within the last fortnight he has vomited twice or thrice; sometimes he has passed an entire day without vomiting at all. But, whatever the interval, it always seemed that, when he vomited, he brought up all that he had taken since the last time of vomiting, so that the longer the interval, the greater was the quantity ejected. The ejecta consisted always of the food taken, whatever that might have been, excessively acid, and with a fetid sulphurous smell. This fetor has increased lately, and he has observed for some time that the matter vomited has fermented on standing. He has no pain, but for the last month has had a heavy dragging sensation at the stomach. During the whole nine months since the dyspeptic symptoms first set in he has been losing flesh. The abdomen was well examined; it was quite flat and soft; there was no tenderness; no tumor nor sense of resistance anywhere; there was extended stomach resonance. Some of the matter vomited was examined: it was a brownish liquid, intensely acid, in a state of fermentation. On standing, it divided into a thick scum of brownish yeasty substance at the surface; a quantity of semi-turbid fluid beneath, and at the bottom a deposit of half-digested food. A little of the scum was put under the microscope, and exhibited abundance of sarcinæ. Although the history of the case, and the patient's general aspect, left little doubt of there being organic disease of the stomach, the discomfort arising from the vomiting and the fermentation was so great, that it was thought desirable to try the effect of hyposulphite of soda. This was accordingly commenced on the 4th of July, 1855, in the dose of ten grains, three times a day, in an ounce of infusion of quassia. This produced no effect on the frequency of vomiting, or on the quantity ejected, but it gradually diminished the acidity, the fetor, and the fermentation, and within eight days entirely put an end to them. Some of the matter vomited on the 18th was submitted to careful examination, without detecting any sarcinæ. He continued the sulphite to the end of the month without any return of the fermentation, but without any effect on the frequency of vomiting. He left town, and

went to the sea-side for the month of August, during which he took no sulphite; but the fermentation did not return, except on one or two occasions, and then he attributed it to his having taken improper food. He returned at the end of the month, evidently sinking fast. A remarkable lull, however, took place in his symptoms a few weeks previous to his dissolution. The vomiting for several days had been almost incessant, and by the 8th of September was quite so, not a teaspoonful being retained for a moment on the stomach, while his strength was apparently ebbing away. But on that night he did not vomit at all, and had tranquil sleep. The next day he got up, and remained up nearly the whole day without vomiting, and for ten days he only vomited on one occasion, though he took a great deal of food. On the 18th he ate too heartily of improper food, and on the morning of the 19th vomited a large quantity, which fermented briskly. This state of things continuing till the 22d, the sulphite was given again, and the fermentation was at once arrested. The sulphite was discontinued on the 24th; the fermentation did not return. On the evening of the 27th he expired. On the 23d, for the first time, the vomit had the appearance of coffee-grounds.

An examination of the body was made after death. There were some old adhesions of the left lung, otherwise the thoracic and abdominal viscera were healthy, except the stomach; this was enormously dilated, and occupied the greater part of the abdominal cavity; its parietes were very thin, but healthy in appearance, except towards the pylorus, where there was, on the anterior surface of the organ, an ulceration larger than a crown-piece. This ulceration did not extend to the pylorus, though it did to within two or three lines of it; but the mucous membrane between it and the pylorus, and the whole circumference of the pylorus itself, were in a state of colloid degeneration. Only a moderately sized quill could be passed through the pylorus.

ART. 61.—*The prevalent Bowel Complaints in the Crimean Expedition.* By Dr. SMART, Surgeon of H.M.S. *Diamond* (Hospital-ship), at Balaklava.

(*Lancet*, June 2, 1855.)

The author describes two forms of bowel disease that have prevailed in the forces of the Crimean Expedition during the last winter, and he gives cases typical of each. The first affection described is that kind of dysentery terminating in ulceration of that variety termed "Pustular," by Blane, and other authorities in the medical histories of former campaigns. The other form of disease is classed "*Diarrhœa*," the name, as observed by the author, of a symptom only, and not even persistent in the course of the complaint, and which cannot convey any idea of morbid conditions that terminate in general softening of the villous layer of the mucous coat of the intestines—a lesion that causes death, by destroying the absorbing power by which the chylous products of digestion are introduced into the system.

Reviewing, says Dr. Smart, the term of six months now expired since leaving the shores of Bulgaria, there is seen to have existed throughout a winter campaign an almost exclusive disposition to disease affecting the organs of digestion and assimilation. This of itself the author considers would point to malific causes of a nature wholly different from those which ordinarily determine the relative frequency of diseases; because, under common circumstances of winter season, in a climate rather more temperate than that of the British isles, the maladies that affect the glandular system, the respiratory organs, and those of locomotion, would be expected to prevail. In estimating the causes which have led to the production of other forms of disease than those just alluded to, the author observes, that it should be recollected that when the army left the plains of Bulgaria to combat on the heights of the Crimea, the cholera was not extinct from its ranks; that during the passage by sea it had given ample proofs of its not having left them, and that after they were landed it burst out with epidemic violence immediately after the battle of the Alma, when the allied troops encamped upon the ground upon which the enemy had been routed. Cholera followed the armies to the encampments on the heights of Sebastopol and Balaklava, but with the advance of winter it declined, and before Christmas its

intensity had become so reduced that perfectly developed cases of it were of rare occurrence. The author continues, when cholera and diarrhœa were on the wane, diarrhœa and dysentery complicated with jaundice became very frequent complaints. These were at first manageable complaints, but the operation of new malific agencies, such as deficient vegetable supplies, improperly cooked and salted meat, the overcrowding of men in the tents, the continued position in the trenches, cold, defective clothing, and other causes which are inseparable from winter campaigns, induced a scorbutic cachexy effecting a complete change in the general expression of the bowel diseases, which then assumed the forms of "camp dysentery" and the "lienteric diarrhœa," which latter the author regards as a continuous link in the chain of the last cases of cholera.

ART. 62.—*The use of Riding in Hemorrhoids.* By Mr. J. RAMALD MARTIN, late Presidency Surgeon, and Surgeon to the Native Hospital, Calcutta.

(*Lancet*, Oct. 6, 1855.)

"The benefits derivable from horse exercise, in the prevention and cure of hæmorrhoidal affections, are not generally understood; yet they are very great. Riding on horseback acts beneficially by accelerating the course of circulation along the veins, while it brings the sphincter and adjoining muscles into alternate action, thus contributing, the one action with the other, to prevent venous engorgement, and to impart tone to the relaxed muscles."

ART. 63.—*The use of Oil of Male Fern in Tænia.* By Dr. GULL, Assistant-Physician to Guy's Hospital.

(*Guy's Hospital Reports*, 1855.)

In this paper we find an abstract of fifty cases which have been treated by oil of male fern since the year 1851, and reference is also made to 200 cases which have also been treated at Guy's Hospital in the same way, during the same time, and with such results that the oil "is now esteemed at the hospital as the most convenient and effectual remedy we have hitherto had." In the fifty cases related in the paper, the result was uniformly successful. The oil was given to children of from two to three years old, and repeatedly, without the slightest ill effect. It generally causes some degree of nausea, and not unfrequently slight vomiting, and it acts as a moderately brisk purgative in a period varying from one to twelve hours, so that it was not necessary to associate any other purgative with it. The dose was, for the most part, from one and a half to two drachms, taken in a mucilaginous draught, but Dr. Gull thinks that one drachm would have been sufficient in the majority of instances.

Contrary to the opinion of Bremser, the result of these experiments is to show that the oil is as effectual a remedy in the tape-worm of England (*tænia*) as in the tape-worm of Switzerland (*Bothriocephalus*).

The paper also contains some excellent remarks which, at one and the same time, help us to know whether a worm is present, and whether the medicine has acted effectually. It is well known that the segments are continually ripening and falling off from the free extremity of the worm, and if, therefore, there are no segments in the motion after a certain time, we may be sure that no worm is present. Now this certain time may be fixed roughly at three months; and if, therefore, this time passes without any evidence of the worm in a person who supposes himself to be suffering from worms, or after a vermifuge remedy has been administered, we may be sure that there is no worm in the bowel.

ART. 64.—*Case bearing upon the causes of Tape-worm.* By Dr. R. W. CRIGHTON.

(*Edinburgh Monthly Journal*, 1855.)

This case is very interesting as showing the importance of attending to diet as well as drugs in the treatment of *tænia*, and also from the bearing it has upon the causes of the disorder:

CASE.—In December, 1853, I was consulted by J. B., æt. 40, a calico-printer, on account of tape-worm, with which he had been troubled for six or seven

years. On inquiring as to what means he had employed for his relief, I was much struck at the long list of medical practitioners under whose care he had been, but without obtaining respite for any length of time from his distressing complaint.

He stated that the remedies employed had generally been successful in bringing away portions of the parasite, but that after a greater or less time, never exceeding a few weeks, his symptoms, itching, pain, &c., had invariably returned.

The observations of Dr. Nelson on the development of *Tænia Solium* immediately occurred to me, and led me to ask him whether he was in the habit of eating animal food uncooked. After some hesitation, he admitted that he was, that he had acquired the practice in his native county, Lancashire, and that since his removal from it to Derbyshire, his complaint had increased much, owing, he thought, to his not having fish so frequently as before.

He assured me that the practice of eating raw meat was quite common among the Lancashire operatives, and seemed quite incredulous when told that it would be the origin of his disease.

Although he used both beef and mutton, he preferred the latter, and used more of it in a raw state. When questioned as to the frequency of his taking it uncooked, he allowed that he did so at least once a week.

He had beside him many different medicines, supplied or prescribed by various practitioners, which from time to time brought away joints of the worm. I therefore ordered him no more vermifuge remedies, but a brisk purgative, as his bowels were sluggish, and one of the preparations of iron, on account of his being weak, and anæmic. I enjoined him also, if he wished to get rid of his tedious ailment, to avoid raw flesh in future. I did not see him again for some time, but learned from one of his employers, that his health had improved much, and that he was able to attend to his duties from which he had been laid aside.

On inquiring after him during the summer of 1854, I was glad to find him nearly free of his complaint, and during the present month (May, 1855), he states that he has been completely well since the end of last summer, not having seen any portions of the worm since the beginning of September, and that he has entirely abandoned the practice of eating uncooked animal food.

The case narrated is an illustration of the advantages that accrue to practical medicine from the cultivation of pure science, and it shows that the importance of inquiring into the hygienic influences to which a patient may be subjected, is sometimes of greater consequence than the administration of remedies.

ART. 65.—*The anthelmintic action of Quinine.* By Dr. DELVAUX.

(*Presse Méd. Belge*, April, 1855; *Phil. Med. Examiner*, Aug., 1855.)

So early as 1764, Professor Van Doeveren, of Groningen, reported two very interesting observations on the anthelmintic properties of Peruvian bark.

The first case was that of a child, æt. 12, affected with *tænia*. Purgatives, calomel, assafœtida, &c., had been tried, but in vain. At last, an ounce and a half of Peruvian bark was given in four days. After having taken the powder, the patient passed an entire *tænia* with the head.

In the second case, the patient was a young girl laboring under fever. She took an ounce of powdered Peruvian bark, made into an electuary with simple syrup. Three round worms were expelled.

In a great many cases, adds Van Doeveren, physicians have given this febrifuge with the single idea of subduing fever, and without having the least suspicion of worms, and nevertheless it has brought them away [this circumstance led to the employment of quinine as an anthelmintic by the author]. Heister combined bark with mercury in his anthelmintic electuary, probably because he suspected the vermifuge power of the former.

I have collected upwards of forty cases of children affected with lumbricoid ascarides, who have been radically cured of this affection with sulphate of quinia. The salt usually produces, at the end of twenty-four or thirty-six hours, several liquid motions containing these entozoa.

The sulphate of quinia is also most effectual in removing the ordinary ascarides (*oxyures vermiculares*). As is well known, these parasites are lodged in

the fecal matters in the rectum, sometimes in the colon. They appear to imbibe a remnant of the chyle, which serves to nourish them. They are expelled in a ball (peloton) with the fæces, or escape by themselves, causing intolerable itching, tenesmus, and other annoyances.

Injections of sulphate of quinia, repeated every evening for a certain time, are capable of completely destroying these entozoa.

I had twice an opportunity of administering sulphate of quinia for *tænia*, and in both cases the worm was expelled, and was not reproduced. The first case occurred in October, 1855, and was that of a widow, æt. 28, who had suffered for many years from a *tænia*, of which she was constantly passing one or more segments. Every known anthelmintic had been administered, without completely freeing her from her malady. After having taken about forty-six grains of sulphate of quinia, she voided several yards of a *tænia*, the characters of which corresponded with those of the *bothriocephalus latus*. The medicine was continued for some time, and she has ever since enjoyed good health, and has had no return of the worm attacks.

The subject of the second case, dating from the month of March, 1855, was a little boy, æt. 4, who, according to the report of the parents, had been, from the time he was one year old, in the constant habit of passing entire ells of a large flat worm, which I recognized to be the *tænia lata*. Sulphate of quinia was exhibited, a worm twenty-nine and a half feet (nine metres) in length was expelled, since which there has been no return of the affection.

Sulphate of quinia is, therefore, truly an anthelmintic. The physician often meets debilitated sickly young children, whose constitution bears the stamp of the most profound asthenia. He generally shrinks, when these children are at the same time attacked with worm affections, from the long list of anthelmintics, which, most frequently, only act on the digestive tube by producing violent effects, which are often felt injuriously throughout the entire system.

It is in such cases especially that the sulphate of quinia is advantageous, and I have never seen its employment followed by unfavorable consequences. Sulphate of quinia produces its vermifuge effects in virtue of its bitter properties; for bitters, as is well known, act more energetically as poisons on animals, in proportion as the latter are lower in the scale of creation.

Is it not on account of their bitter properties that Celsus and Cælius Aurelianus extol wormwood and centaury as anthelmintics, and that Riviere (*Praxis Medica*, book v, chap. 9) praises the same and other plants as vermifuges, and as especially efficacious in removing lumbricoid ascarides? Kluyskens, in his treatise on "*Materia Medica and Therapeutics*," says, that "bitters are very detrimental to worms." "It is a very curious fact," observes this writer, "that vegetable bitters should in general be so destructive to inferior animals; flies perish almost immediately on being wet with an infusion of quassia."

It is, therefore, not impossible that sulphate of quassia should be capable of killing intestinal worms. Moreover, by its tonic action, it restores the power of the digestive organs, debility of which strongly predisposes to the production of entozoa.

The dose of the sulphate must vary according to the age of the patient; from two to ten years it will range between three and six grains; in older persons, so much as nine grains may be given in the twenty-four hours.

(E) CONCERNING THE GENITO-URINARY SYSTEM.

ART. 66.—*The pathology and treatment of alkaline conditions of the Urine.*

By Dr. G. OWEN REES, Assistant-Physician to Guy's Hospital.

(*Guy's Hospital Reports*, 1855.)

The opinion held by Dr. Rees, and held by him for more than ten years, is, that the existence of the phosphatic diathesis, as described by Dr. Prout, is more than doubtful; and that phosphatic deposits in the urine are simply due to the urine being rendered alkaline by the alkaline secretion of the mucous membrane of the urinary passages and bladder, after it has left the secreting surface of the kidney. He holds, indeed, that *healthy* urine is secreted in the so-called phos-

phatic diathesis, and that, when not healthy, it is frequently more acid than it ought to be. He holds, moreover, that undue acidity of the urine, when secreted, is very frequently the cause of that irritation in the urinary passages, by which these passages are made to throw out an unusual quantity of alkaline mucus, and thus undue acidity of the urine, when secreted, is a cause of undue alkalinity of the urine when excreted.

Dr. Rees states distinctly that his own experience is quite opposed to the belief that the urine is ever *alkaline* when secreted by the kidneys, except in those cases where it is made so by medicines or by diet, and he thinks that alkalies are the proper remedies for alkaline urine. The relief obtained in gonorrhœa from remedies which render the urine alkaline is, he thinks, a sufficient proof that the natural acidity of the urine will irritate an inflamed mucous surface, and this relief points at the same time to the propriety of neutralizing this acidity in cases where there is undue irritation of the urinary passages from any cause. This idea, moreover, is quite borne out by Dr. Rees' experience, and he is fully satisfied that alkalies form the proper remedies in the so-called phosphatic diathesis, and that there is no fear of any deposits being caused by them.

Nor is it any objection, Dr. Rees argues, that *acids* are occasionally of service in these cases, for these agents may tend to restore a healthy condition of the urinary passages by improving the general tone of the system. Under all circumstances, however, it is more easy to bring about a cure by alkalies than by acids.

"The mineral acids may improve the health, and they will not render the urine very much more acid and irritating: and therefore the patient may in time do well under their use, but their administration must interfere, in any case, with the exhibition of such remedies as are best adapted to relieve the state of the patient: and if the case be more advanced, even any trifling excess of acidity may inflict mischief. I have often watched the attempt to acidify alkaline urine by the exhibition of mineral acids; and after complete failure, have as often succeeded in restoring the healthy acidity by the alkaline treatment. One of the most striking instances I have seen of late, showing the advantage arising from remedies which render the urine alkaline *as secreted*, occurred lately in the practice of my friend, Mr. Cock, who requested me to visit a young man who had undergone the operation of lithotomy. His symptoms were most unfavorable, the urine strongly alkaline, and the wound in the perineum (through which the urine still flowed) was completely coated with phosphatic deposit. In this case it was determined to exhibit the ammonia-citrate of iron and citrate of potash, in doses such as would render the urine alkaline *as secreted*, the patient being meanwhile supported by stimulus as before. In a few days a great change was brought about. The urine having been rendered less irritating to the inflamed mucous surfaces, they had begun to recover themselves, the phosphatic deposit was by degrees washing off, and every bad symptom had abated.* The earthy salts seemed in this case to be acted upon by the urine, thus medicinally rendered alkaline; and it would appear not improbable that the excess of carbonic acid and alkaline bicarbonate produced in this urine, owing to the decomposition of the tartrate and citrate in the organism, had exercised a considerable solvent action on the earthy phosphates. This was quite a case for a crucial experiment, and the result was satisfactory in the extreme."

The object of this paper is to recapitulate what has been already stated, and to state the results of subsequent experience.

ART. 67.—*On the nature of Diabetes.* By Dr. PAVY.

(*Guy's Hospital Reports*, 1855.)

The following interesting passage occurs in a paper entitled "Researches on the Nature of the normal destruction of Sugar in the Animal System."

"If I dared to hazard an opinion on the nature of that obscure disease, diabetes mellitus—the few observations, that I have yet made on the blood of these patients would lead me to say that there is a modification of sugar produced by the liver which is not susceptible of undergoing the normal process of destruction or

* This patient was eventually discharged cured.

metamorphosis in the animal system, and which is eliminated on its arrival in the capillaries of the renal organs. The experiments of Bernard have shown that if vegetable glucose (grape sugar) be injected into the general venous circulation, it is not destroyed in the system but is eliminated by the kidneys; whilst if it be injected into one of the veins of the portal system, and thus made to traverse the capillaries of the liver (so as to be converted into animal glucose), before entering the general circulation, it subsequently undergoes destruction in the system, and does not appear in the urine. Diabetic sugar would, therefore, seem to bear a resemblance in its physiological relations to vegetable rather than to animal glucose. But I am now engaged in a series of experiments on this subject, which, with the information we possess at the present time, I would venture to hope may some day lead to some definite conclusions concerning this long vexed pathological question."

ART. 68.—*The condition of the Liver in Diabetes.* By M. ANDRAL.

(*Dublin Hospital Gazette*, Sept. 15, 1855.)

Since M. Bernard's views respecting the glucogenic function of the liver were made known to the profession ("Abstract," No. XIX.), M. Andral has seen an abnormal condition of the liver in five cases of diabetes. The changes were in all identical, and consisted in a dark red coloration so remarkable, that the liver, instead of presenting two colors, yellow and red, presented throughout a uniform red color; in fact, intense hyperæmia. This, Andral says, is an important fact, and if the liver secretes sugar, it is logical to admit that hyperæmia of that organ in diabetic persons is the anatomical sign of that over-activity which occurs in the glucogenic function. Thus, physiology and pathology mutually illustrate each other. In conclusion, says M. Andral, all I pretend at present to advance is, that in diabetes the liver does not present its normal anatomical condition, that the changes found are always the same, and that this fact, taken in connection with the discovery of the glucogenic function of the liver, may be considered as one of the proofs of its performing this function.

ART. 69.—*On the curative treatment of chronic Morbus Brightii.* By Dr. HANDFIELD JONES, F.R.S., Assistant-Physician to St. Mary's Hospital.

(*Medical Times and Gazette*, May 19 and May 26, 1855.)

"Two conclusions, of the utmost importance to us in practice seem to me fairly derivable from the knowledge we have gained respecting Bright's disease. The first is, that the morbid condition, whether attended with hypertrophy or atrophy, is of the nature essentially of depraved unhealthy nutrition, not in any wise the result of ordinary inflammation attacking a previously healthy structure. In the atrophied kidney, I see a change just such as befalls any part that, from defect of its own vital energy, gradually decays. I have found recently just the same occurring in the pancreas. The enlarged kidney is, I am sure, frequently associated with scrofulous disease in other parts. I have seen it coexisting with tubercles and vomicae in the lungs, and deposit of bacony matter in the spleen, of a patient who died with tertiary syphilis. The enlargement of the kidney seems to take place much in the same way as the enlargement of a gland (lymphatic), which becomes the seat of scrofulous deposit. In both cases, unhealthy plasma is organized into low celloid forms, and in much the same relation to adjacent structures. The conclusion above stated is strongly supported by the latent, insidious manner in which Bright's disease usually comes on, by the efficient causes, and by the juvantia. To the former, as essentially of debilitating character, I have only space just to allude. When hyperæmia or inflammation actually makes its appearance, other symptoms are observed (especially in the urine) than those which occur in the degenerative state alone.

"The other conclusion is that, in a great majority of cases, in which the symptoms announce degeneration of the kidney, it may reasonably be anticipated that a considerable part of the organ remains in a state which is capable of restoration more or less complete. As long as the tubes are undestroyed, we

may have hopes of being able to reproduce a healthy condition of their epithelial lining; if they have perished, the attempt must be ineffectual, but at any rate can scarcely be in any case injurious. We shall, therefore, do wisely to act on the most favorable supposition, and employ all our efforts to prevent the degeneration advancing further, to repair as far as possible the damage that has been effected. The question is, how shall this be done? and to this, of course, experience alone can give a satisfactory answer. Strongly convinced as I am that Bright's disease is not inflammatory, in any correct use of the word, but is purely a disease of depraved nutrition, I can entertain no doubt that the right method of treating it is to endeavor to improve the general vigor and power of the system, and therewith its nutrition, in every possible way. We must not be satisfied with the removal of the dropsy, and restoration to apparent safety; but we must go on in the task of corroborating the system, till the urine has recovered its healthy condition, and the blood again imparts a ruddy hue to the complexion, and the muscles are toned to strength and vigor. I do not say that we shall always, or often, be able to do all this completely, but this is what we should perseveringly aim at; and I think we have good ground for believing that such persevering effort may make all the difference to many of our patients, between an early death and many years of tolerable comfort and enjoyment. I have seen a patient this very day who has *Morbus Brightii* in a marked form, with its perilous complications of dropsy, bronchitis, and threatening cerebral symptoms. His history is that he had smallpox at an early age, and has never been well since. How different might his condition now have been, had the renal degeneration, which no doubt dated from the debility induced by the smallpox, been observed and combated many years ago."

Dr. Jones then relates five cases, three of which we give, in order to show the beneficial effects of treatment. We quite agree with him, and we will say with him, "We are watchful to detect the invasion of phthisis, we combat its progress vigorously, diligently, and often successfully; why should we not do the same with this not less formidable malady?"

CASE 3.—F. P., widow, æt. 57, laundress, admitted Aug. 10th. Ill fourteen days. Abdomen and lower limbs swollen. Breath short on exertion. Pulse regular and steady. Sounds of heart natural. Clear breathing in the back. Tongue furred, with long papillæ. Bowels regular. Urine of pretty healthy color, deposits a not abundant sediment, consisting of epithelial scales (many of them fatily degenerating), mucous corpuscles, or stunted particles of renal epithelium casts either homogeneous and containing a few corpuscles, or orange-colored and made up of coarsely granular and oily matter. There was also much scattered granular matter. Much albumen was thrown down by heat and nitric acid. Reaction acid. Sp. gr. 1015.

R Tr. Ferri Muriat., ℥x;
Tr. Digitalis, ℥v;
Inf. Quassia, ℥j, ter die.
Pil. Hydr. c. Coloc., gr. v, alt. noct.

28th.—Getting on very well, swelling all gone. Urine pale, deposits a dark reddish brown sediment consisting of casts, mostly containing much molecular oil, with some corpuscles and blood globules. There are also very numerous perfect nucleated cells scattered over the field, and much diffused granulous matter forming films. It is decidedly, but not highly, albuminous; nitric acid only forms a cloud—no flakes. Reaction highly acid.

Sept. 4th.—Pt. in mist. omiss. tr. digitalis.

11th.—Complains of being heart-sick. Bowels costive. Pt. in Mist. Mist. Rhei et Magnes., ℥j o. mane. Urine at this date was scarcely altered by nitric acid; it deposited on standing a notable sediment of reddish hue, consisting of diffused granular matter, nuclei, granular corpuscles, blood disks, and a few glomeruli. These elements were sometimes united into masses, sometimes they formed complete casts of the tubes of some length. Hydrochloric acid precipitated no uric acid.

25th.—Better a good deal, no swelling, pain in forehead, which is hot for the last three days. Pt. in Mist., Olei Morr., ℥ij ter die.

Oct. 16th.—Feels quite well, not the least swelling. Urine is wheyish, pale, sp. gr. 1014, gives no precipitate, not even increased opacity with heat and acid, but after standing some hours a very notable reddish sediment subsides, which on reboiling in great part disappears. A whitish sediment (not copious) is deposited from the urine on standing, which consists of granulous matter, nuclear corpuscles, and fragments of casts, most of them containing corpuscles and more or less oily molecular matter.

Nov. 13th.—Has remained quite well since last report. Discharged. The urine now was clear, palish, acid, sp. gr. 1018; it contained no albumen, no precipitate taking place after testing with heat and acid, and allowing the tube to stand some hours. Nitric acid precipitated a tolerable quantity of lithic acid, and when added to the concentrated urine plenty of nitrate of urea was formed. A slight sediment deposited from the urine contained a very few fattily degenerating casts, and some free corpuscles possibly of renal origin.

There can be no question, I think, that chronic degenerative mischief was going on in this patient's kidneys, when she first applied to me; and there seems good ground for the hope that this was arrested, and the functional power of the kidney, as well as its nutrition, increased, while it is certain that the general health was greatly improved and invigorated. Would these results have been attained by the administration of evacuates in any form? I think not.

CASE 4.—Samuel C., æt. 48, tailor, admitted November 14th. Is tall, robust, ailing last fourteen days, suffers with pain and tightness at chest; legs swell a good deal last few days; throat has been rather sore. Has pains in loins sometimes. Pulse rather jerky, weak. Tongue a little white. Heart's sounds healthy. Never had rheumatic fever. Is not in the habit of drinking, has always had good health, but has been much confined last six months; used previously to have much exercise. Urine turbid, of smoky aspect, loaded with albumen, sp. gr. 1017, after separation of albumen by infiltration, sp. gr. the same, reaction acid; on standing it deposits a rather copious whitish sediment, consisting of corpuscles, generally small, of numerous casts mostly pale and homogeneous, containing often small corpuscles or granular matter, and blood globules. Considering that I had to do in this instance with congestion of the kidney superadded to degeneration, I had him cupped on the loins to ℥v , and gave him Pulv. Jalap. co., ℥ss , o. mane, as well as Tr. Ferri Muriat., ℥x Acid. Muriat., ℥ij in Inf. Quass. ℥j , ter die.

On the 24th he stated that his breathing was a great deal easier; the swelling of the legs was less, but was still considerable; the abdomen was less swollen; the urine was a great deal more copious. The pulse was now full and forcible. He complained of having much violent pain in the head at times. Not yet feeling satisfied that the tendency to congestion of the kidneys was overcome, I thought it advisable to give him Ant. Pot. Tart., gr. ss, Potass. Acet., gr. x, in Inf. Calumb., ℥j , ter die, instead of the steel, but containing the powder.

He continued this plan till Dec. 1st, when he reported that the urine was copious; he had to rise three or four times in a night; the pulse was quick, weak; the skin cool. The effusion in the abdomen had diminished, and there was less anasarca, but he had much swelling of the legs at night and of the face in the morning. Trusting that now I might safely return to the tonics, I gave him Acidi Nitrici, ℥v ex Infus. Gent. co., ter die; and Tr. Ferri Mur., ℥x , ter die, c. Cibus, continuing the Pulv. Jalap. co. He improved immediately, the dropsy diminished, so that the legs appeared free from swelling, except a little at night.

This treatment was continued till Jan. 16th, when some more dropical swelling of the legs appeared, and the urine was found dark colored and highly albuminous; he complained of stiffness in the loins, and had ten days before experienced some symptoms of catarrh. The pulse was 130 in the sitting posture; tongue clean; bowels open. Not wishing, if possible, to abandon the tonics, I changed the acid and steel for Hydr. Bichloridi, gr. i, Tinct. Cinchon., ℥ij ; ℥j ter die ex aquâ, with Quin. Disulph., gr. ijss, in pil. ter die.

On February 6th he had less pain of head; a slight degree of swelling of the legs had occurred at night in the last two days, but there had been none previously for three weeks. The urine continued very albuminous, but less so than

it had been. I continued the pill, but combined now *tr. ferri mur.* with the bi-chloride, omitting the bark.

On the 23d there was only some trifling swelling of the legs; his aspect was pallid; the urine deposited a distinct but not abundant precipitate of albumen after testing with acid; it contained scaly epithelium, and mucous corpuscular forms in plenty, a very few casts (homogeneous and corpusculated), and a few blood globules.

March 16th.—He was gaining strength; the urine was rather cloudy, deposited a slight whitish sediment, was acid, and slightly albuminous, and of light color. After treatment with nitric acid, it deposited abundance of uric acid crystals, *sp. gr.* 1015. The deposit consisted of scaly epithelium, with some renal, some doubtful blood globules, and a very few casts.

The same plan was persevered in up to April 24th, when he had been gaining strength pretty steadily; had some slight swelling of the legs, and some pain in head. The urine was very pale, and *sp. gr.* 1014, very slightly albuminous, and contained no casts. I now changed his quinine pill for one of *Quin. Disulph.*, *gr. i.*, *Ferri Sulph.*, *gr. ijss.*, *ter die*, and continued his mixture.

June 12th.—He reported himself improved, stronger a great deal, and had more color. The urine was slightly turbid, contained a deposit of scaly epithelium, uric acid, oxalates in small quantity, and a very few casts, some of which were homogeneous, and others imbedded granular corpuscles. Reaction was acid. It was just clouded by NO_3 , *sp. gr.* 1022.

By July 20th, the same plan being continued, there was not the least dropsical swelling, and the urine was not albuminous, but contained a good many casts.

August 10th.—The mixture was discontinued; he took the iron and quinine pills alone. He continued improving, finding himself not so well if he omitted his pills.

On Sept. 7th, the urine was examined at the hospital and noted to be of good amber color and not albuminous, and the same was the case on the 28th, though he was complaining of rheumatic pain in the back.

However, careful examination of the urine at home, on October 12th, showed that after treating it with heat and acid, and allowing the tube to stand quietly for several hours, there was deposited a small reddish sediment of albumen. The *sp. gr.* 1030; the urine was of good color, slightly cloudy; it contained a very few pale, homogeneous casts, entangling oil-molecules or corpuscles.

On November 6th, he resumed the use of quinine and sulphate of iron, which had been intermitted since September 28th; they were now given in rather larger doses, two grains of the former to three of the latter, *ter die*.

He gained in strength and general health, and on January 4th I discharged him, very tolerably well, though certainly with less color in his face than I could have wished. His urine, then, I noted as not albuminous.

On November 6th, the urine was clear, rather light colored, of *sp. gr.* 1026; deposited a very few casts, homogeneous and corpuscular, and some renal corpuscles. It was very acid. It was not perceptibly clouded by heat and acid; deposited much uric acid in crystals after treatment with NO_3 . After standing some time, with addition of NO_3 , a slight precipitate remained at the bottom.

On Dec. 13th, which was the last close examination I made before his discharge, the urine was clear, of good color, of *sp. gr.* 1028; contained no casts or renal epithelium; treated with nitric acid it did not appear altered. After standing a night thus tested, there were numerous crystals of uric acid deposited, and the fluid was very slightly clouded, but this was probably from lithates, as it disappeared with heat. When the urine was concentrated and treated with nitric acid, plenty of nitrate of urea was formed.

I should apologize for the length of this case, did it not appear to me of great importance as proving the efficacy of persevering therapeutical efforts. There can be no question that the kidneys were affected seriously by degenerative disease, which I am inclined to think was of the hypertrophic kind. The influence of remedies was decided, but very gradual, and it is of especial interest to remark that it was only the tonics that procured real, steady improvement. A critical period in the history of the case was about Jan. 16th, when it was a

question of abandoning tonics, and recurring to mere evacuants. Fortunately, the bichloride of mercury came in at this time with marked good effect, and enabled us to proceed with attempts at radical cure. Three weeks later I combined the chlorides of iron and mercury, continuing the quinine, and from thenceforward recovery went on uninterruptedly. The gradual but complete change which took place in the urine was very interesting: its sp. gr. increased, the albumen disappeared, the color improved, the fibrinous casts ceased to be formed, and almost every proof was afforded that the function of the kidneys was restored. I confess that had the man been a private patient, I should have insisted strongly on his taking cod-liver oil and courses of steel for many months to come, till the improved color of his face, and the absence of any return of renal symptoms had convinced me that the cure was permanent. A sea voyage would also, beyond doubt, have been productive of good, if undertaken during the summer months, and in a warm latitude. These are, however, luxuries of treatment which the hospital physician has rarely in his power.

CASE 5.—As I by no means wish to make out too favorable a case, I will now mention an instance in which the same kind of treatment, though employed pretty steadily, failed to do all that I had hoped for.

Ann U., æt. 30, married, a tall, handsome-looking person, was admitted under my care, as an out-patient, January 12th. She had an easy confinement five weeks before; the legs had been swollen before the accouchement, but did not diminish in size, nor (as she stated) did the abdomen, or but little. There was distinct fluctuation to be felt in the peritoneum; the legs were a good deal swollen. Pulse large and excited. Tongue denuded and fissured. Bowels much relaxed last fortnight, twelve motions a day. Urine was pretty clear, rather pale; sp. gr. 1015; highly albuminous; contained numerous casts, homogeneous and corpusculated, one containing a glomerulus, and some renal epithelium. The sight of the right eye was very weak, but there was no visible morbid appearance. She was suckling her infant.

I gave her at first *Ol. Morrh.* with *Tr. Ferri Mur.* *ter die*, and a daily purge of *Pulv. Jalap. co.*, hoping that, as the quality of the blood improved, the dropsy would decrease; but no such favorable change took place, not even after a small cupping on the loins, and with the aid of a saline diuretic containing digitalis. *Elatarium* was tried without benefit, and matters remained *in statu quo* about a month. I then gave her that well-known excellent combination of blue pill, squill, and digitalis, which immediately caused diminution of the dropsy; and under this she went on improving for three weeks, the mouth being slightly affected. I then gave her *Tr. Ferri Mur.* along with the pill, and soon after omitted the blue pill altogether.

By April 6th, she had improved so far as to be able to walk round the Serpentine; the ascites had almost if not quite disappeared, but the legs were still rather swollen. I made frequent examinations of the urine.

On March 8th; I found that the sediment contained numerous uric acid crystals, a sign which I regarded as favorable from having often observed it in the urine of patients recovering from scarlatinal dropsy.

On April 29th, the urine was clear, after having let fall a slight pale precipitate consisting of numerous epithelial scales, some pus-like corpuscles, and epithelial flakes; there were scarcely any casts to be seen. Its reaction was highly acid; sp. gr. 1014; its color a light amber; it contained a notable quantity of albumen: uric acid crystals were formed on the side of the glass in which the urine stood. Although the urine was so highly acid, it was remarkable that on each successive drop of nitric acid being added a white cloud was formed, which again quickly disappeared, and it was not until a good deal of acid had been added that the white cloud became permanent. I have often noticed this, and believe that the explanation is to be found in the circumstance that the albumen in the urine exists combined with an alkali, soda (as in the blood serum) which requires to be completely neutralized before the albumen can be precipitated. After this I gave gallic acid, *gr. v.* *ter die*, and *Tr. Ferri Mur.*, but without any improvement in the state of the urine. The bichloride of mercury with *Tr. Ferri Mur.* was also tried for some time, but, though her health and strength in-

creased, the urine remained as before. The Liquor Ferri Persesquinit., with nitric acid, was not more effectual.

By July 20th, the dropsy had almost entirely disappeared, the sight of the right eye was much improved; she could use it well, though it was not quite strong. She then went into the country, with directions to continue the use of the Tr. Ferri Mur., which she did for more than two months, and returned in the beginning of November last, much better and stronger, and with a color. There was rather some thickening of the skin of the leg than any œdema. She is now able to do her household work, and looks very well. I have not been able to induce her to continue the steel, though I have strongly recommended her doing so.

On her return from the country, in November, the urine was pale, of sp. gr. 1015, highly albuminous, gave a pale deposit consisting of epithelial scales, numerous uric acid crystals, a few homogeneous casts, and some masses of nuclear corpuscles, together with free nuclei and granular matter.

The improvement in this case, which was effected by tonics, was limited to the general system; the urine was altered very little. I am much inclined to think that the cause of the persistent albuminuria was rather a permanent change in the capillaries of the Malpighian tufts than any considerable degeneration of the renal tubes. These capillaries, in the healthy state, have the extraordinary power of filtering off mere water and salts from the blood which traverses them; in Bright's disease this power is impaired to a greater or less degree, and liquor sanguinis, more or less altered, drains off. This impairment of the filtering power of the Malpighian capillaries is not solely and constantly associated with degeneration of the renal tubes; it is found, *per se*, to constitute the essence of the affection termed chylous urine, which can be arrested by styptic and astringent remedies (such as oil of turpentine and gallic acid), and in which, after death, no degeneration of the kidney is found to exist. Now it is quite possible that though the proper renal tissue may have recovered its healthy state, and secretes a fair proportion of urea and uric acid, yet the capillary membrane of the Malpighian tufts may remain permanently damaged, and thus liquor sanguinis will be continually draining off and mingling itself with urine otherwise healthy. Somewhat of this kind I conceive the pathological condition to have been in the last-mentioned case, as I scarcely think, if there had been any considerable defect in the depuration of the blood by the kidneys, the general system would have regained so much of health and vigor. It is remarkable that although the renal disease must, beyond doubt, have been in progress during the pregnancy, yet the confinement took place without any convulsions.

I had written the above before I examined the urine on February 24th; it was pale, wheyish, deposited a good deal of scaly epithelium, but few if any casts; it contained a good deal of albumen. Its sp. gr. 1015. Its general appearance led me to fear that I had been wrong in the opinion above expressed; but when I found that HCL precipitated a good deal of uric acid, and that the concentrated urine yielded with NO_3 a fine specimen of nitrate of urea, I was confirmed in my view.

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

(A) CONCERNING TUMORS.

ART. 70.—*On Dr. Landolfi's treatment of Cancer.* By M. LASEGUE.

(*Archiv. G n rales de M d.* May, 1855.)

SOME sensation has lately been caused by Dr. Landolfi in various parts of the continent, by his promulgation of a new mode of treating cancer. This mode consists in the external application of chloride of bromine made into a paste with liquorice powder, either alone or in combination with other caustics. One of his formul  is made of equal parts of four separate chlorides—bromine, zinc, antimony, and gold. The chloride of gold is supposed to be especially efficacious in cases of encephaloid cancer; the chloride of zinc where there is much hemorrhage. At the same time, a small quantity of chloride of bromine is given internally, but no great stress is laid upon this part of the treatment.

The caustic is applied to the part according to ordinary rules, care being taken to prevent injury to the sound parts. The pain which results, and which is often severe and protracted, must be combated by anodynes, if necessary; and when it ceases, the part is to be treated with poultices or ordinary dressings until the eschar separates, which is usually from the eighth to the fifteenth day. If any cancerous point remains after the separation of the eschar, a small portion of the caustic must be applied to it. In the end, we have to deal with an ordinary granulating wound.

M. Landolfi is at present conducting a series of experiments at the Salp tri re under a commission of inquiry, but the result is not yet made known. M. Landolfi is surgeon-in-chief in the Sicilian army, and lecturer on cancerous diseases in the Trinity Hospital at Naples.

ART. 71.—*Case of Galactoc le in an old man.* By M. VELPEAU.

(*Gaz. des H p.* No. 58; and *Medical Times and Gazette*, July 14, 1855.)

M. Velpeau, in his work on diseases of the breast, describes, under the above title, a rare affection of the breast, all the examples of which had occurred in women. Recently, however, he has met with a case, in La Charit , in the person of a robust old man,  t. 75, which is probably unique. Brought in for injury to the head, his left breast was observed to be as large as the fist, presenting all the appearances of the breast of a woman of the same size. To pressure, which caused no pain, it imparted the sensation of a bladder filled with semi-fluid matter, and the skin covering it was quite healthy. The patient stated that the swelling had appeared several years since, after a severe illness, and had never caused him any inconvenience.

After an incision, M. Velpeau forced out by repeated pressure, a glass and a half of whitish, inodorous, ill-matured matter, resembling clotted cream, the clots, which constituted a considerable part of the product, being of a yellowish white, and easily crushed. Examining the fluid by the microscope, Robin found from one-eighth to one-tenth to consist of fatty globules, differing in nothing from those of milk. There were also numerous lamelliiform crystals of cholesterine,

and some pus-globules. In the solid part of the tumor the same elements were observed, together with many granular bodies, analogous to those of the colostrum, the elements being held together by a considerable amount of semi-solid amorphous matter. The man died of bronchitis. No trace of either glandular structure or of a membrane of the cyst could be found.

ART. 72.—*On the microscopical appearances in Elephantiasis.* By Dr. ALLAN WEBB, of the Bengal Medical Service.

(*Indian Annals of Medical Science*, April, 1855.)

We take the following particulars from an elaborate paper on this disease, illustrated with many carefully-told cases, and containing details as to the mode of performing those elephantine operations which are so often wanted in Bengal for this elephantoid disease. Dr. Webb is speaking of *E. Scroti*. Of this there are two varieties, the simple and the venereal.

"Its substance, in both varieties, consists of mixed fibro-cellular and elastic tissue, which is tough and most condensed in the oldest or circumferential part of the tumor, whilst the softest and latest additions appear to take place nearest to the trunk, unless one portion arising in cells, another in nuclei, account for difference in density. This cutaneous outgrowth begins from the exudation of a common albuminous product very like white of egg, which makes cellular tissue œdematous, and usually organizes itself into nuclei, which afterwards become fibres, at other times after fever, the fibres originate in nucleated cells.

"Dr. Skinner, Surgeon to the Governor-General's Body Guard, has very kindly examined both varieties, which are essentially the same structure. The following is his description:

"It most probably has its origin in an inflammation of the cellular tissue, into whose stretched and enlarged areolæ a fluid is poured out capable of speedy organization. The part never again seems to return to its former dimensions, in consequence of no absorption taking place in this lowly organized new structure, hence that firm, tough, and brawny character which a section of the older portion of the disease exhibits.

"The older portion of the tumor manifests, under the microscope, nothing but yellow and white fibrous tissue; the latter being very abundant.

"The younger part shows the same thing. Here are also to be seen white fibrous tissue in many stages of development, from the simple cell to the formation of fibre-nuclei of this tissue in excessive abundance; of various shapes, round, oval, and lengthened out, containing numerous granules or nucleoli. Those cells which are very much attenuated and drawn out have lost their nucleoli, and show only a bright interior.

"The fluid, which is very abundant in the meshes of the young or softer part of the tumor, contains a few blood and colorless corpuscles, and is exceedingly albuminous."

"My observation of some hundreds of these tumors agrees with Mr. Paget's description of them.

"I examined with the microscope three of these tumors, which I removed on the same morning in the Mesmeric Hospital, in 1842, immediately after their amputation, and whilst they were yet living and rolling under the action of the muscular fibres. The great mass of the tumor is formed by a development of subdartoid tissue. Its cells containing sometimes crystals of margarine, and always abundance of albumen; its envelope, hypertrophied skin and dartos. I had never then seen what was pointed out to me by my friend and colleague, Professor Macnamara, namely, that smooth unstriped muscular fibres are also found in these tumors; a fact unknown, as we have seen before.

"But on various occasions, as well as that I now allude to, I found the tumors contract at the point irritated, upon pricking the white substance. This is now fully explained, as muscular fibres are found in this substance.

"Professor Macnamara examined many specimens most minutely of both the venereal and simple variety. His description is very characteristic, and is here added:

"The outer portion of the tumor immediately under the skin was very dense and fibrous; of a glistening white color, but became less and less compact

internally, till in its central portion it presented a semi-fluid gelatinous mass. Examined with the microscope, the dense external tissue presented all the characters of the true cutis, but more closely woven, and containing a more than natural predominance of the white fibrous element. The interspaces between the bands of tissue became larger towards the centre of the tumor, and many newly formed fibres presented themselves. The cells from which they had been developed were still plainly discernible, as granular bulgings in the direction of the length of the fibre.

"The semi-fluid tissue clearly exemplified the mode of growth of these tumors. It consisted principally of a densely albuminous fluid, exactly resembling, in external appearance, the albumen of an egg; and, like it, coagulable by heat to a compact white mass. In this were to be seen fibres in all stages of their growth,—cells still preserving their original shape, others becoming pointed at their extremities, and about to lengthen into fibres; and fibres from neighboring cells connecting themselves together.

"Bloodvessels ramified through the mass; groups of fat-globules were here and there scattered through the tumor."

"In one case I removed the tumor six days after an attack of moon-fever. Here Dr. Macnamara observed exudation cells, nucleated cells in great abundance, changing into fibres, immediately under the skin.

"I have never seen in these tumors any fibrinous deposits in the veins,—any indication of phlebitis or lymphitis. In the excellent paper of my friend Dr. Wise upon this disease, he seems to have regarded inflammation of the veins as the chief cause of the malady generally, as well as of the disease in the leg. He says 'that elephantiasis is produced by an inflammation of veins.'"

ART. 73.—*Results of operations in cases of Elephantiasis.* By DR. ALLAN WEBB, of the Bengal Medical Service.

(*Indian Annals of Medical Science*, April, 1855.)

In the paper already referred to we find the following passage. The italics are ours.

"The disease" (Dr. Webb is speaking of *E. scroti*) "is most striking and wonderful—tumors upwards of 100 lb. in weight are safely removed by the knife in a few seconds by one operation, and in from two or three minutes, preserving intact all the organs of generation; and lastly, and most wonderful of all, *the very process which heals up this enormous wound, during two months or more of granulation, radically cures the disease. If elephantiasis have been in the extremities, as well as the scrotum, the amputation of the scrotum cures the disease.*"

(B) CONCERNING WOUNDS AND ULCERS.

ART. 74.—*Fluid India-rubber as an artificial cuticle.* By DR. STILLMAN.

(*New York Journal of Medicine*, Sept. 1855.)

We anticipate great advantages in the adoption of Dr. Stillman's suggestion.

"About a year since," writes Dr. Stillman, "I was presented by Mr. Armstrong with a bottle of the milk of the *Hevea* or Caoutchouc, in the liquid form in which it exudes from the tree. It is preserved in that state by the addition of a small proportion of free ammonia, and is now introduced as an article of commerce for manufacturing purposes, and, from my experience with it, I am impelled to call the attention of the profession to it, as a most useful contribution to our *materia medica*. It is of the color and consistency of pure milk (if my recollections do not deceive me), but becomes transparent as soon as dry. Owing to its great elasticity, it does not contract so violently as the collodion, it adheres closely to the skin, and allows entire freedom of motion and application to any extent. In burns it has an advantage over anything I have ever used, as also in erysipelas. An acquaintance with it by surgeons will lead, I do not doubt, to many valuable improvements, in surgical appliances."

ART. 75.—*A new way of applying pressure in certain wounds of Arteries.*

By Dr. W. H. B. JONES, R. N.

(Cape of Good Hope Medical Gazette, Oct. 1, 1847.)

A case somewhat similar to the following is related in the article on hemorrhage in Samuel Cooper's 'Dictionary,' only in this case pieces of copper were used instead of pieces of lead. The lead, however, is obviously preferable, as being more pliable.

CASE.—"A young plethoric midshipman required to be let blood, for an affection of the head (distressing Cephalalgia). From the accumulation of fat, no vein could be perceived at the bend of the arm, but a puncture was made in the situation of the median cephalic. A thrombus formed, very little blood flowed, but syncope took place. In a short time a tumor was perceptible, accompanied with shooting pain along the arm, extending to the shoulder, with numbness of the fingers, and a feeble pulse. There was no pulsation in the tumor, until the following day, when it had attained the size of a pigeon's egg, and pulsed strongly; there was now considerable heat, with increased pain of the arm, and some stiffness of the elbow joint. A firm compress and bandage was applied, and the parts kept constantly wet with the Sol. Acet. Plumbi dil. No change took place in the tumor for three or four days, when a more perfect plan of compression was considered necessary. Three circular pieces of lead, of gradually increasing size, from that of a shilling to a crown piece, were placed accurately over the wound, and a further compress of lead, of three inches in length, and half an inch broad, was laid over the main artery above the bend of the arm. A bandage, moderately tight, was applied over the whole fore and upper arm, and the cold lotion was continued. The tumor was examined every three or four days, and was found gradually diminishing in size. In a fortnight it had disappeared perfectly, when he was discharged cured; and, at the end of two years, he continued quite well. It is needless to say, that during the cure strict rest and antiphlogistic regimen were enjoined. The artery wounded in this case, was not in the course of either the brachial or radial arteries, and was, therefore, supposed to be one of those anomalous branches which sometimes arise from the brachial.

ART. 76.—*On Bullet-wounds.* By Mr. DUGAN, R. N., attached to the Naval Brigade lying before Sebastopol.

The following particulars are from a paper giving an account of the wounded in the recent bombardment of Sebastopol:

"Our advanced trenches being, in many places, within forty yards of the enemy's rifle-pits, wounds of great severity were inflicted on both sides, as the force of the bullets was undiminished by distance. The orifices of exit, caused by the conical balls, more resemble shell wounds, in some instances, than a bullet aperture. In wounds about the head, especially, I have seen nearly the whole of the parietal bone carried away.

"Notwithstanding those jagged wounds from Minié balls, I have seen a soldier of the 41st hit by one on the nose, which caused as clean a wound as if done by a sharp knife. The nose was divided at the junction of the cartilages with the bones. The lower portion dropping down, but adhering by a good pedicle. It was brought together, as in hare-lip.

"Most of the wounds caused by the new conical bullets are, however, remarkable for the manner in which they plough up the soft parts.

"A soldier of the 33d was struck by a ball which made six openings. It passed through the right thigh, through the scrotum, and through the left thigh, where it escaped.

"The Russians use several kinds of bullets—one a solid conical ball, which belongs to the Liège rifle; another of a larger size and conical form, hollow at the base, with a small pillar, or nipple, standing in the cavity. It is surrounded by three lines. At the base, to guide the ball in its flight, there are two other smaller ones, modifications of this principle. The old round ball is also still

employed. In some cases two of those round bullets have been found connected by a transverse wire, like bar-shot."

ART. 77.—*A memoir on Indolent Ulcers, and their surgical treatment.* By JOHN GAY, F.R.C.S., late surgeon to the Royal Free Hospital.

(12mo., London, Highley, 1855, pp. 108.)

This small work is an amplification of a paper which was noticed in a former volume (Abstract, xviii); but not merely this, for in reality it is a valuable treatise upon ulcers and their treatment. The principal object, however, is to inculcate a new principle of treatment in the case of those ulcers which appear to defy all other methods of treatment. This is, first, to relieve the tension of the adjoining skin and other tissues, where that is opposed to the healing of a sore, by incisions at right angles to the line of tension; and, secondly, to cover the ulcer with new skin by a kind of plastic operation, where the obstacle to cicatrization is in the fixed condition of the edges of the ulcer. In this latter case, the edge of the ulcer is pared, and the knife passed under the surrounding skin so as to detach it from the subjacent tissues; then the skin from each side is made to glide over the ulcer, and the opposed edges are fixed together in the median line by hair pins; and, last of all, collateral incisions are made to relieve the tension if there is any stress upon the pins.

We are sure that no surgeon will consider the time ill-spent which he devotes to reading this unpretending but really valuable work.

(C) CONCERNING FRACTURES AND DISLOCATIONS.

ART. 78.—*On Mathysen's Gypsum bandage.* By Drs. GRIM and JUNGKEN.

(*Annalen des Charité-Krankenh.* Bd. v; and *Medico-Chir. Rev.* July, 1855.)

Dr. Mathysen's bandage was employed in thirty-six cases of fractures of various kinds early in 1854. The bandage is prepared by stretching it upon a table, and well rubbing powdered gypsum into it on each side. It is then rolled up or otherwise arranged, according to the use to be made of it. Immediately before applying it, it is dipped in water or other fluid, the limb being protected by a flannel or other bandage prior to its application. Any portion of the bandage that is found not to have become wetted is moistened by a wet sponge. Flannel will take up twice as much gypsum during the rubbing than linen; but it is more clumsy, and not so easily applied. If a very firm, immovable bandage is required, some of the gypsum, in the form of a thin paste, should be applied during the last turns of the bandage. Its appearance is much improved by passing a damp sponge several times along it while still wet, and at a later period it may be smoothly polished by means of glass. To remove the bandage, it only requires to be again well wetted.

The reporters pronounce this bandage as the best of all hitherto invented, including those that most resemble it, as the starch-bandage, upon the following grounds:—1. The rapidity with which it hardens. 2. Its simplicity and easy application. 3. Its small cost. 4. The ease with which it may be removed,—the linen composing it being available, after twenty-four hours' soaking, for new bandages. 5. Its firmness and immovability render it suitable for the most oblique and difficult fractures. 6. From its rapid hardening and its firmness, it is well adapted for those cases which require extension and counter-extension to produce coaptation of the fractured parts. The position obtained remaining unchanged, apparatus of extension, so uncertain in operation, and so annoying to the patient, is not required. 7. The ease with which it is borne. 8. Its porosity. Cutaneous transpiration is not quite suppressed, and if the fracture be complicated by wounds, ulcers, &c., these are indicated by the discharges making their way through the bandage. 9. The gypsum bandage is a good conductor of heat, and a bladder of ice placed over some oil-skin, around the fractured part, takes effect in five minutes. 10. When the bandage is properly applied, the form of the limb is so well displayed, that any irregularity of the fractured part may be judged of externally. 11. Its handsome appearance and regularity distinguish it

from all analogous bandages. 12. Fractures seem to unite sooner under its employment.

(D) CONCERNING DISEASES OF THE BONES AND JOINTS.

ART. 79.—*Case of Cancer in the Bones.* By Mr. R. W. SMITH, Professor of Surgery in the University of Dublin, &c.

(*Dublin Hospital Gazette*, March 15, 1855.)

This case is, perhaps, the most remarkable instance on record, of cancer in the bones, and its value is greatly enhanced by the comments which accompany it. It occurred some time ago, but the precise time is not stated.

CASE.—The patient was a female, æt. 63, of sallow complexion and a very unhealthy appearance. Four years before her death, and eight after the catamenia had ceased, she began to suffer from lancinating pains in the left breast, and a small, hard tumor formed near the nipple, and very soon became adherent to the skin, was uneven upon its surface, and after some time the axillary glands became enlarged and indurated. The tumor underwent no further changes for two years and a half, when a scab formed upon its surface, upon the separation of which a very superficial ulcer, not as large as a shilling, remained; this sore never increased either in extent or depth, and yielded but little discharge. In fact, during the remainder of her life, the diseased breast attracted no share of her attention, and the lancinating pains which were at first experienced, latterly ceased altogether. Severely, however, and almost unceasingly, did she suffer from pains, which she conceived to be of a rheumatic character, in all her bones; she had cough, and pain in the right side; her appetite failed, her sleep deserted her, and her flesh wasted away: she was for a long time before her death completely bedridden; she could not endure that any one should touch her; and her efforts to move herself in the bed were, upon several occasions, followed by fracture. She died, exhausted by pain and suffering, and in a state of complete emaciation.

The post-mortem examination, which I conducted with the greatest care, proved most interesting, and revealed an immense extent of cancerous deposit, limited to a single system; for, with the exception of a tubercle, about the size of a small nut, in the liver, the organs, in all the cavities were perfectly healthy; while, upon the other hand, nearly the entire of the skeleton, from the head to the feet, was pervaded by cancer.

In the anterior part of the frontal bone, there existed a firm, white, elastic tubercle, of the size of a nut, in the diploë: it had absorbed both tables, and penetrated the frontal sinus, through an opening in its posterior wall. A second and much larger mass existed more posteriorly, which had separated the inner and outer tables widely from each other; reduced them to an extreme degree of tenuity, and, in some places, totally absorbed them, and in such situations, the pericranium and the dura mater formed the immediate coverings of the tubercle: both these membranes were healthy. In several situations, the frontal and parietal bones were discolored, and presented a slightly corroded aspect: and through all parts, so altered, the scalpel could be passed without difficulty into the brain; and when the calvarium was removed, the corresponding parts upon the internal surface of the bones were found similarly discolored, and raised slightly beyond the level of the surrounding bone. The cancerous deposit had, likewise, perforated the occipital bone, and absorbed a portion of the petrous process of the temporal bone.

The left clavicle was fractured external to its centre, and the interior of the bone was occupied by scirrhus matter from its sternal to its acromial extremity.

The left humerus was broken in its centre, and the cancerous deposit filled the medullary canal from the head of the bone down to its lower extremity.

The right femur was fractured at the junction of its upper with its middle third: a longitudinal section of the bone exhibited a fine example of carcinoma occupying the cancellated structure and medullary canal. A large, circular, scirrhus tubercle was seen in the very centre of the head of the bone; another

existed in the cervix, while from this down to the lower third of the shaft, the cancerous matter was deposited in one continuous mass: the compact structure became gradually thinner as it approached the seat of fracture, and a circular perforation had been produced by the tubercle which occupied the head of the bone.

In the left femur, the ravages of the disease were even more extensive than in the right: the cervix was broken, a considerable portion of it absorbed, and the remainder occupied by a mass of scirrhous structure, which was also copiously deposited throughout the remainder of the bone, which, near its centre, was perforated by one of the tubercles.

There were no tubercles in the bones of the leg, but the medulla presented a most unhealthy appearance and color, and its consistence was totally different from that which it possesses in the normal state.

The ribs contained numerous deposits of scirrhous in their interior, and several of them were fractured.

The disease occupied the spinal column from the lower part of the cervical region to the sacrum; the cancellated tissue of the bones had disappeared, and its place was occupied by a firm, elastic, scirrhous structure of uniform consistence, and of a roseate hue; there were here no separate tubercles, one mass of the morbid deposit filling the interior of the body of each vertebra, and in many places the compact structure of the posterior surface of the bones had been destroyed. The laminæ of the vertebræ and the spinous processes had undergone the same carcinomatous degeneration, and the vertical extent of several of the dorsal vertebræ was much diminished, some of them not being more than half an inch in depth.

The bones of the pelvis were entirely converted into a scirrhous structure. The ilium was perforated by large circular tubercles, which were in contact with the periosteum of the iliac fossæ, and in some situations the carcinomatous matter was deposited in a continuous sheet throughout the diploë. The ischium and pubis, which had suffered an analogous degeneration, were both fractured, and the morbid growth had even made its way into the acetabulum.

The characters of this heterologous deposit were precisely the same in all the affected bones; it was white, firm, tough, and dense in its texture, highly elastic, and cut like cartilage; it in no respect differed from true scirrhous as it is seen in the female breast. The osseous tissue in contact with it had suffered no alteration but such as resulted from absorption.

"The preceding case," says Mr. Smith, "furnishes the most remarkable instance with which I am acquainted, of cancer of the bones, a disease, many points in the history of which are surrounded by difficulty and involved in obscurity, notwithstanding the elaborate nature of the investigations to which it has of late years given origin.

"Using the term in its widest acceptance, we meet with cancer in the osseous system under several forms, and a great variety of circumstances; it occurs either as a primary or secondary disease; we see it limited to one bone or invading many, either simultaneously or in succession; we find it either with or without profound modifications in the osseous structure in contact with it; it is seen with tumor external to the affected bone, or the latter may preserve to the end its normal form and outline; it may invade the bone from its periosteal surface or perforate it from within; it may present every variety of color and consistence.

"It is by no means my purpose, at present, to consider the disease under all these different circumstances; on the contrary, I wish to limit my observations to the affection as it presents itself in the remarkable case which has been detailed.

"We have here an example of the deposition of scirrhous in the osseous tissue, an occurrence which has been denied by a recent and distinguished writer:—*'Il est à remarquer que le tissu squirrheux qui se trouve fréquemment dans les autres tissus ne se montre pas dans les os.'*^a It does not, it is true (although the contrary is stated by Cruveilhier), occur as frequently as some of the other

^a Nelaton, tome ii.

forms of malignant disease, but, nevertheless, I have seen several examples of it, and I may remark that in many striking features it differs from the encephaloid tumor of bone; for instance, it is very seldom, indeed, that the scirrhus tubercle passes the level of the surface of the bone in which it has been deposited; nor has my experience furnished me with any example in which it formed a tumor obvious to the eye, no matter how superficially placed the affected bone may have been; while, upon the other hand, the growth of the encephaloid tumor is almost unlimited.

"Again, the true scirrhus tubercle does not convert the bone into its own tissue; it is not found to contain osseous spiculæ; it produces no organic change in the bony structure by which it is surrounded, which is simply absorbed 'molécule par molécule,' until what is termed spontaneous fracture takes place, and in some cases this is the first and only indication of the presence of so formidable a disease in the osseous system.

"Moreover, I have never seen the scirrhus tubercle confined to a single bone, on the contrary, it usually invades a large portion of the skeleton, nor have I observed it independent of cancer in some other part of the body; but with regard to the encephaloid disease, although frequently it attacks several bones, yet frequently also, it exists in one alone, and without any other organ or structure being affected with malignant disease.

"It will be understood that in the preceding remarks I make no allusion to what some have termed cancerous infiltration of bone, a form of disease marked by pathological phenomena totally different from those which characterize the scirrhus tubercles, and in which the osseous structure seems to suffer a genuine atrophy, both of its earthy and organic constituents.

"In the case which has been described, there is nothing more remarkable than the universality of the deposit, the complete cancerous infection of the skeleton, and this associated with so trifling an amount of malignant disease in other parts. I can offer no explanation of this singular preference shown so frequently to the osseous system in cases of mammary cancer, which, indeed, appears to possess, in a higher degree than cancer of any other structure, the power of contaminating the whole economy.

"Lebert found the osseous system diseased in fourteen, out of twenty-three, cases of cancer of the breast. I have never found any of the bones affected with scirrhus in cases of uterine cancer, but Cruveilhier has recorded an example of this disease, in which the frontal bone was perforated by a scirrhus tubercle developed in the diploe; and also one of cancer of the stomach, in which tubercles were deposited in the humerus, leading to the fracture of the bone. The results, however, of my own experience, agree with those of Mr. Stanley, who states that he has never seen hard cancer in bone as a primary disease, or in any cases where the primary cancer was situated elsewhere than in the mammary gland. It is, of course, true, that malignant disease frequently affects the osseous system primarily and solely; but in such cases the morbid growth assumes the form of cephaloma, osteosarcoma, &c., &c.

"It has been in the very chronic forms of cancer of the breast that I have most frequently seen the osseous system generally infected by scirrhus; but I had lately under my care in the Richmond Hospital a case where the mammary cancer was of rapid growth, and in which severe pains in the long bones and in the vertebræ left little doubt on my mind of their being contaminated by the disease.

"When situated in the diploe of the bones of the head, the scirrhus tubercle generally destroys the internal to a much greater extent than the external table, but it seldom passes the level of the bone, nor have I ever seen it produce symptoms of pressure on the brain, or of irritation of the membranes.

"The class of diseases of the osseous system to which the case which I have detailed is to be referred, constitutes a subject surrounded by difficulty and much obscurity, and most important in its pathological and practical bearings, but one upon the consideration of which it would be impossible to enter at present; but I hope, upon some future occasion, to have an opportunity of discussing fully the entire subject of the malignant tumors of the bones."

ART. 80.—*On Secondary Inflammation of the Joints.* By Mr. COULSON, Senior Surgeon to St. Mary's Hospital.

(*Lancet*, June 9, 1855.)

These inflammations occur during the course of other disorders. They are not accidentally associated with them, but evidently connected by some peculiar link with the primary affections, as is shown not only by the peculiar characters of the secondary diseases, but by the frequency of their occurrence during the course of the primary affection. The term, "secondary inflammations," is applied by the author to these diseases of the joints, in order to leave open the question of their nature; but he is disposed to affirm that more accurate and extensive investigations will enable us to ascend one step higher, and trace them all to blood-poisoning. Having related the details of a case of gonorrhœal rheumatism, the author observed that the points of most interest in connection with these secondary inflammations of the joints are:—

1st. What are the primary diseases with which they are allied?

2d. What is the nature of these secondary affections? are they of rheumatic origin, as the name given to them generally would lead us to suppose, or are they specific inflammations?

3d. If specific inflammations, does each group acquire its specific character from the primary disease on which it depends, or can we trace the whole class of secondary joint-affections to one general law, giving to all the same character, independently of the particular disease from which the group appears to originate?

According to the author, the chief primary diseases or conditions with which these secondary inflammations are connected may be divided into seven groups. They are—

1. The puerperal state, giving rise to puerperal rheumatism.
2. Exanthemata, especially smallpox and scarlatina, producing inflammations of the joints generally attributed to rheumatism.
3. Injuries to the genito-urinary apparatus of the male.
4. Gonorrhœa, followed by so-called gonorrhœal rheumatism.
5. Animal poisons, especially that of glanders.
6. The state of new-born children.
7. Injuries, amputations, &c., followed by purulent inflammation of the joints.

In speaking of puerperal rheumatism, the author pointedly alludes to the error committed by many writers, who join the name of rheumatism to the articular affections which occur in puerperal females. These differ from true rheumatism in every essential particular,—in the general and local symptoms, in the course, in the result, and in the effects of remedies. The general symptoms of acute rheumatism are inflammatory; those of puerperal arthritis are eminently atonic. Besides this, the general symptoms which accompany the articular affections of puerperal women do not belong to the joint-diseases; they do not correspond to any known class of fevers, but they depend on a peculiar state, which has been traced to purulent infection of the blood. The general signs of the rheumatic diathesis are absent in these and other cases of an analogous kind,—a circumstance which should be decisive of the question. The course of the two affections is different; although the local symptoms are much less violent in puerperal arthritis, it runs a much more rapid course than rheumatism, however acute. The local symptoms are altogether disproportionate to the effects produced on the joint, supposing the disease to be rheumatism. Acute rheumatism hardly ever ends in suppuration; whereas effusion of pus within the cavity of the joint is the main character of the puerperal disorder. The results are different; for rheumatism of the joints, *per se*, never proves fatal; whereas nearly all the cases in puerperal women terminate in death. Remedies, therefore, produce no effect in the latter diseases; while rheumatism, in all its forms, is amenable to treatment. Puerperal arthritis may occur after parturition, or after abortion, during the early period of pregnancy. It may, or it may not, coexist with puerperal fever; and hence the great diversity of general symptoms observed in different cases. Sometimes the articular disease is merely one of the effects of uterine phlebitis, the general symptoms being those of purulent

infection of the blood. In other cases, we have uterine phlebitis followed by puerperal fever, and complicated with purulent absorption. Here the two orders of general symptoms—viz., those of puerperal fever, and those of purulent infection—coexist. The secondary puerperal inflammations of joints have a tendency to run a very rapid course. The purulent effusion sometimes occurs within a few hours after the first symptoms of pyæmia. Several joints are attacked in succession. The cartilages are apt to suffer, being often softened, abraded, or absorbed. Effusions of pus often exist around the joint, and in the centres of the muscles; and the limb is frequently affected with an œdematous swelling, which much resembles phlegmasia dolens. In the great majority of cases, the inflammation is purulent; more or less pus is effused within the cavity of the joint, and the synovial membrane is injected, though it may happen that the injection is very slight. In other cases, the purulent deposits take place outside the joints. In a few cases, the articular inflammation is non-purulent, although deposits of pus are formed in the neighboring muscles. Finally, in some cases, the inflammation of the joints is simple and slight, terminating of its own accord in a few days.

The next group noticed by the author, is that connected with injuries to the genito-urinary system of the male. The secondary affections of this group are usually purulent, though often simply inflammatory. The pus deposits exist very often exterior to the joint, as often, perhaps, as in the joint itself. The course of these inflammations is irregular; in some cases they are very acute; in others, the series of attacks, though subacute, is spread over a long period of time. Here the pyæmia appears to be of a chronic kind; and the secondary articular affections may terminate favorably. It is remarkable that many of these diseases appear to be produced by mere irritation of the urethral membrane; but Mr. Coulson thinks that, in such cases, ulceration or phlebitis has existed in some part of the genito-urinary system, the irritation merely acting as an exciting cause of absorption of the pus.

The articular disease, improperly called gonorrhœal rheumatism, is next considered; after which the author notices the well-known group connected with wounds and injuries.

Inflammation of the joints connected with blood-poisoning from the introduction of certain animal poisons is then described. Mr. Coulson connects this group with glanders, the only poison whose effects on the joints have yet been studied. The articular inflammation which appears during the course of glanders is generally purulent, though sometimes simple. Its principal character is chronicity; the blood seems to be affected by many successive poisonings, and hence, perhaps, the reason why the articular inflammation is occasionally simple, although the primary disease is essentially purulent.

The secondary joint-diseases connected with smallpox might be placed in the preceding group; but, in compliance with received opinions, the author classes them under the exanthemata. These variolous inflammations are sometimes purulent; but they are commonly slight, and terminate spontaneously in a few days.

Scarlatina is also attended by a peculiar inflammation of the joints, which has latterly attracted much attention, although its history is still obscure. Many physicians persist in regarding it as rheumatic; but while Mr. Coulson admits that epidemic rheumatism may coexist with epidemic scarlatina, he believes that most of the cases which have been described as rheumatism are really secondary inflammations of the synovial membrane, of the kind described in this paper.

From these considerations, the author is disposed to infer that the seven groups of secondary inflammations of the joints, which he has described, may be all referred to one specific cause,—viz., infection of the blood. Moreover, he attributes five out of the seven to purulent infection of the blood; while he attributes variolous and gonorrhœal inflammations to the same cause, though with a certain reserve, as not yet fully established. The circumstance of these inflammations being often simple, Mr. Coulson says, is not conclusive against their connection with blood-poisoning, because the articular inflammation consequent on pyæmia is not invariably of a purulent nature.

(E) CONCERNING OPERATIONS.

ART. 81.—*On Synchronous double Amputations.*

By Dr. MARSDEN, Governor of the College of Physicians and Surgeons of Lower Canada.

(*Montreal Med. Chronicle*, June, 1855.)

Dr. Marsden writes upon this subject, partly to settle a question of priority, but principally to enforce what he considers to be a good rule in surgery,—a rule which all army surgeons especially should have their attention directed to at the present time. The rule is, for two surgeons to operate simultaneously in those unhappy cases in which it is necessary to remove two limbs. This rule is allowed in Lower Canada. It was first laid down and put in practice, many years before chloroform was introduced, by Dr. Morris, in the Hôtel-Dieu, at Quebec, his assistant being Mr. Hall; and again, in 1837, in the same institution, by Drs. Parrant and Sewell. Since this time, Drs. James Douglas and Sewell have operated at the Marine and Emigrant Hospital in the same place; and last of all, Dr. Wolfred Nelson, of Montreal, whose paper on the subject has given occasion to the article under consideration.

Dr. Marsden says:

“My own conviction is, that recovery is more rapid under the simultaneous double operation than under the double interrupted amputation. It is obvious that, by the removal of both limbs at once, the nervous irritation that the unamputated limb occasions is done away with, and the mental disquietude that the patient always suffers in anticipation of the second operation is avoided, besides saving the time that is usually necessary for the patient to recover his strength and tone after the first nervous shock. But more than this, the saving of the vital fluid tends materially to the rapid recovery, as well as the abridgment of the duration of suffering. The quantity of blood lost in the double simultaneous operation is little, if any, greater than in each single amputation of the same member; and, in this view, I am supported by the opinions of all the gentlemen who have operated, or assisted at these operations.”

ART. 82.—*The treatment of purulent Ophthalmia.*

By Mr. FRANCE, Ophthalmic Surgeon to Guy's Hospital.

(*Guy's Hospital Reports*, 1855.)

In this paper, several cases are related, in order to show the benefit resulting from the treatment of which the synopsis is subjoined. A table of results is also added which speaks very pointedly to this effect. The treatment is now uniformly adopted in Guy's Hospital.

Table of Results of Cases of Purulent Ophthalmia.

28	Persons were affected with the disease.
43	Eyes were affected.
7	Eyes were completely spoiled before admission.
36	Eyes were subjected to treatment in hope :
3	Of these were lost, the cornea having been hazed or ulcerated before admission ;
*1	Was lost, respecting which the state of cornea on admission is not recorded ;
1	Remains under treatment, with fair prospect of recovering useful vision ;
1	In the same subject as the last, has already regained excellent vision ;
30	Exclusive of that just particularised, were saved, retaining perfect, good, or useful vision. Several of these had been contaminated by gonorrhœa, and in several ulceration had commenced before admission. The group comprises all in which the cornea was intact on admission, unless that marked * were an exception.

*Synopsis of Treatment.**a. During the acute stage :*

- 1st. Local depletion by leeching the lids and scarifying their inner surface, every twenty-four hours.
- 2dly. Scarifying the ocular conjunctiva, according to Tyrrell's mode, in radii, daily, so long as chemosis is high.
- 3dly. The application between the lids every three, four, or six hours, of drops of a solution of nitrate of silver, containing from three to eight grains in the ounce of distilled water; the strength of the collyrium and frequency of use depending on the severity of the symptoms, and being consequently modified as these abate.
- 4thly. Constant fomentation and ablution with decoction of poppies, having a drachm of alum dissolved in the pint.
- 5thly. The brisk exhibition of calomel and antimony after proper relief of the bowels, until the chemosis is subdued, or the mouth gives the earliest signs of commencing mercurial action. This remedy must be guardedly used, when the stage of active interstitial deposit, marked by rising chemosis, has given way to that of ulceration manifested in the cornea. It should then be accompanied by a tonic regimen and by—
- 6thly. The use of quinine, in cases where debility prevails at the outset, or is subsequently induced.
- 7thly. Moderately nutritious diet, which seems generally most eligible from the commencement, and may be progressively improved as the disease recedes.

β. In the convalescent or chronic stage :

Tonics in diet and regimen, varied local astringents of mild character, and counter-irritants must be used to complete the cure.

ART. 83.—*On sympathetic inflammation of the Eyeball.* By MR. TAYLOR, Surgeon to the Central London Ophthalmic Hospital.

(*Medical Times and Gazette*, Oct. 28 and Nov. 4, 1855.)

This affection occurs under certain conditions and at intervals varying from a few weeks to many years after the destruction of the primarily affected eye by inflammation, generally traumatic, but occasionally idiopathic. It is generally held that it occurs only after traumatic inflammation, but this opinion is refuted by the first four of the following cases. As to the cause, Mr. Taylor observes, that "all we at present appear to be warranted in asserting is, that pathological changes do occasionally take place within eyeballs which have been destroyed by idiopathic or traumatic inflammation, whereby products are generated which appear to act as foreign bodies; or, possibly, in some instances, to have a poisonous effect analogous to that possessed by the contents of a fluid cataract." According to this pathology, then, it is quite intelligible that ordinary means of treatment should prove to be altogether ineffectual, as they are proved to be, in this affection; at the same time Mr. Taylor does not agree with Mr. Pritchard, of Bristol, or Mr. Critchett, in thinking that extirpation of the organ is necessary.

"When we consider that the alternative is total blindness, even this severe operation would be not only justifiable, but imperatively necessary, were it not possible to attain the object equally by milder measures. But as I believe that in such cases the source of irritation lies wholly *within* the disorganized eyeball, I am induced to hope that the comparatively trifling operation which proved so successful in the eight cases detailed below will be followed by the same fortunate results on more extensive trial. The object of the operation is not, as Dr. Jacob asserts, 'to lay open an eye with the view of causing its entire destruction by suppuration.' It is not called for except in cases where the eye has not only been already completely destroyed, but is, in the vast majority of cases, a source of positive disfigurement. So far as the experience in this hospital goes, the offending cause is readily and effectually dislodged on the removal of the cornea. In no one instance has suppuration followed; on the contrary, the wound has

healed with great rapidity, and, in all, a stump has been left admirably fitted for the support of an artificial eye,—an object, it must be remembered, of as great, or even greater, importance to the skilled artisan or the domestic servant, as to those in independent circumstances. I would not be supposed to speak dogmatically on the subject, because much more extensive experience is necessary before any positive conclusions can be arrived at: but I think that a good case has been made out for the further trial of the mode of treatment, which, it may be observed, was suggested many years ago by Mr. Wardrop and Dr. Mackenzie, though it does not appear to have been carried into effect by either of these distinguished surgeons."

We think that Mr. Taylor does very good service to ophthalmic surgery by this excellent paper, for the operation here recommended is very simple and easy of execution—no small consideration for those who are unaccustomed to operate on the eye—and it is incomparably less severe than extirpation.

The following cases were under the care of Mr. Walton:

CASE 1.—George Watson, æt. 14, lost the right eye in infancy from disease, the symptoms of which he is not able to describe. The eyeball is slightly shrunken, the cornea clear, the situation of the iris occupied by lymph of a mottled red and yellow color. He has had pain in the eye from time to time, more severe during the last few months. During the last twelve months, the sight of the left eye has been failing; there is severe pain, intolerance of light, and lachrymation, and the vision is so imperfect that he cannot read the largest print. The pupil is irregular, and adherent in several places to the capsule of the lens. The iris is dull, and the eyeball inflamed.

The cornea, and the lymph which lined the anterior chamber, were removed, and a mass, consisting of the capsule and part of the lens, converted into a chalky material, was extracted. The wound healed rapidly, the pain and inflammation of the left eye immediately subsided, and at the end of five weeks, when he ceased his attendance, he could read "minion" type with ease, though the iris had not altogether recovered its brightness, and the pupil was permanently disfigured by adhesions.

CASE 2.—Rebecca Wilson, æt. 7, lost the right eye in infancy, probably from purulent ophthalmia. The cornea is replaced by a small conical staphyloma. The eyeball is inflamed, and occasionally painful. The sight of the left eye is much impaired; objects can only be seen when looked at sideways, and "a mist frequently passes before the eye." Not a day is passed without paroxysms of pain. There are not any objective symptoms of disease in this eye.

The cornea was removed, and a cretaceous capsule, enclosing a partially cretaceous lens, was extracted. Two months afterwards, when she was seen for the last time, the sight of the left eye was completely restored.

CASE 3.—A. H., a female, æt. 32, has a small conical staphyloma of the right eye, of the cause and duration of which she can give no intelligible account, further than that the sight of the eye has been completely lost for many years. For two years she has suffered from frequent paroxysms of pain in this eye. During the last few months the sight of the left eye has been failing; now she cannot see small objects distinctly, and a mist at times passes before the field of vision, obscuring everything. She is quite incapacitated from work of any description.

The staphyloma was removed, and the capsule, enclosing part of the lens, both loaded with cretaceous deposit, was extracted. Two months afterwards, the date of the last notes of her case, the sight of the left eye was perfectly restored.

CASE 4.—The notes of this case have been unfortunately lost; but the following particulars, given from memory, may be relied on:

The patient was a woman, æt. about 35. One eye had been lost, from idiopathic disease, many years previously; it was partly shrunken, and the pupil was closed by lymph. The sight of the other eye had been failing gradually for two years. There were luminous spectra and the appearance of a gauze veil before the eye, besides a total loss of the power of adjustment, so that the eye was almost useless, and she was quite unfit for any employment.

The cornea of the primarily diseased eye was removed, and the lens converted into cretaceous matter, and firmly adherent to the subjacent parts, was extracted. The wound healed in a few days, and the recovery of the other eye was complete in about two months.

The following cases occurred under Mr. Taylor's care:

CASE 5.—J. Laxton, æt. 35, lost the right eye fourteen years ago, from slow disorganization, consequent on a punctured wound of the sclerótica, within the orbit. He felt no further inconvenience from the accident till about six months ago, when the wounded eye again became troublesome. He has occasional pain in it, but never very severe; there is excessive intolerance of light, lachrymation, and spasm of the eyelids. The left eye soon began to suffer in the same way, and with the exception of pain, to an equal extent. As he cannot fix the eye on any object, it is impossible to say with certainty whether the sight is actually impaired. He has been incapacitated from work for three months, and the eye is of little use except as a guide.

The right eye is soft and atrophied. The cornea is clear, but little more than half the diameter of the other. The iris is discolored, and pressed against the cornea by a body of a dull yellow color. There is considerable sclerotic and conjunctival injection. In the left eye there are not any objective symptoms.

I removed the cornea and extracted the lens, two-thirds of which were converted into a solid cretaceous mass, and the remainder loaded with oil-globules, scales of cholesterine, and molecular cretaceous matter. The chalky mass adhered very firmly to the subjacent textures. The wound healed in a few days, the sympathetic disease subsided rapidly, and, in a little more than a month, he was able to return to his work.

CASE 6.—E. Moss, æt. 13, wounded her right eye with a pair of scissors, the point of which penetrated the cornea at its edge, and ruptured the capsule of the lens. Three months afterwards the eye was soft and atrophic; the iris was discolored and adherent to the cicatrix of the cornea; the pupil was filled up by a plug of lymph. She had scarcely any pain, but there was excessive intolerance of light, spasm of the eyelids, and lachrymation. The left eye was so weak that she could not use it except in the dusk; she could not see to read ordinary print; and a mist frequently passed before the field of vision. The symptoms were becoming rapidly more severe, in spite of treatment. There were not any objective symptoms in the left eye.

I removed the cornea, and extracted the capsule, thickened, loaded with cretaceous matter in masses and small granules, and enclosing the *debris* of the lens in a similar condition. The wound cicatrised in a few days; the sympathetic irritation had almost completely subsided the day after the operation; and in a fortnight the eye had completely recovered its strength, and vision was perfect.

Dr. Garrod kindly analysed the cretaceous deposit, and ascertained that it consisted of phosphate and carbonate of lime.

CASE 7.—Susan Emberson, æt. 31, received a penetrating wound on the sclerotic margin of the left cornea from the bursting of a lemonade bottle ten years ago. The sight of the eye failed slowly and almost painlessly, and was not wholly extinct until nearly two years after the accident. For the last four years she has had an uneasy sensation of weight and pressure in this eye, increased to sharp pain by looking suddenly upwards. During the last twelve months these sensations have recurred with perfect regularity on alternate days, the eye being quite free from uneasiness in the intervals. During the same period the right eye has suffered sympathetically; on the "bad days," as she terms them, she is quite unfit for any occupation; on the intervening days she cannot work or read for more than a few minutes at a time without everything becoming dim and confused. Her health and spirits are much impaired by anxiety, as she fears that total blindness is impending.

The left eye is shrunken, and grooved by the action of the muscles. The cornea is much atrophied, but clear. The iris, dull and discolored, bulges forwards apparently from the pressure of a yellowish substance which occupies the posterior chamber, and adheres to the margin of the pupil. There is slight

injection of the sclerotic and conjunctival vessels. There are not any objective symptoms in the right eye.

I removed the cornea and extracted the yellow substance which was seen through the pupil. It was about the size of a split pea, of the consistence of soft cheese, and was composed of amorphous molecular matter, scales of cholesteroline, oil-globules, and a few fragments of the lens-fibres, but did not contain any cretaceous deposit.

The symptoms were much alleviated, but not completely removed, by the operation, which I have now reason to think was imperfectly performed. The disease, however, was rendered much more amenable to treatment; and now, after an interval of five months, has almost completely disappeared, under the influence, apparently, of full doses of iodide of potassium.

CASE 8—J. Holdsworth, æt. 42, an engineer, received a severe blow on the right eye seven years ago, from a piece of steel an inch and a half in length, which broke from a spring which he was fixing in a vice. The blow was on the closed eyelids, and the eyeball did not appear at the moment to have been injured; but the sight began to fail soon afterwards, and was totally extinct in about twelve months. The eye remained rather irritable, and subject to slight attacks of inflammation when he was exposed to cold, but gave him no further annoyance until ten months ago. He was then seized suddenly with agonizing pain in the eye, radiating over the whole side of the head and face. This has continued without alleviation or intermission up to the present time; he is rarely able to get more than two hours' sleep at a time, and even then, is never unconscious of pain, so that he is quite worn out with suffering and want of rest. The left eye has suffered sympathetically for four months; the sight is so much impaired, that he cannot read the largest letters on the title-page of a book, and the power of adjustment has been almost completely lost; there is great intolerance of light, so that the eye cannot be fully opened except in the dusk, and in full daylight he can barely see his way in well-known neighborhoods. He has undergone a great variety of treatment without the slightest relief, and is anxious to have the eye extirpated.

The right eye is somewhat atrophied, and of a conical form from the bulging of the sclerótica in front. The cornea is clear but smaller than that of the other eye. What appears to be the remains of the iris is in contact with the cornea, retains no trace of its natural structure, and is of a muddy ochre tint. The subconjunctival vessels are large, tortuous and distended with dark-colored blood; there is also some superficial injection. In the left eye there are not any objective symptoms.

I removed the cornea, and with a pair of forceps lifted out a clot composed of an aggregation of granules, somewhat resembling those which are seen in congealed honey, but of a deep ochre color. This was followed by a quantity of the same substance in a fluid state, which flowed out when slight pressure was made, until about half of the contents of the eyeball had escaped, when the vitreous humor began to appear. Along with the cornea, transfixed by the needle which was used to steady the eye, there was removed a solid body about the size of the crystalline lens, of a grayish color in front; posteriorly, of a deep red. Smart hemorrhage followed the escape of these morbid matters; this was readily checked by cold, but left a large clot so firmly entangled in the wound, that it could not have been removed without the risk of completely evacuating the contents of the eyeball. This delayed the healing of the wound for a few days; but, in less than a week, it came away of itself; cicatrization then took place rapidly, the pain ceased entirely and permanently, and he enjoyed the first sound sleep he had had for nearly twelve months. The left eye regained its strength gradually; in about three months it had completely recovered, and he was able to resume his work as usual.

Mr. Quekett kindly examined the morbid contents of the eye. The solid part consisted chiefly of amorphous molecular matter, with a faint appearance of fibres irregularly interwoven; the ochre-colored granules of the clot, and of the fluid which subsequently escaped, presented no trace of structure; they were composed entirely of amorphous molecular matter, which dissolved completely on the addition of acetic acid, as did also portions of the solid body,

which was examined. Mr. Quekett suggested that this deposit might be the remains of a clot of blood, undergoing a peculiar form of degeneration; but, not having previously met with anything exactly similar, he declined giving a positive opinion as to its nature.

ART. 84.—*On the non-existence of Aquo-Capsulitis.* By Mr. WALTON, Surgeon to the Central London Ophthalmic Hospital.

(*Medical Times and Gazette*, May 5, 1855.)

After citing passages from various authorities describing the supposed disease, Mr. Walton proceeds:

"I shall not offer any remark on these passages, as I think that the best answer is to be found in reverting to the anatomy of the parietes of the aqueous chambers.

"On the membrane of Descemet, that is behind it, is a single layer of tessellated epithelium, which is limited to the cornea, and is the only true epithelium found on these walls. The front of the iris has not any, nor has the front of the capsule of the lens. On the posterior part of the iris, the uvea, there are, it is true, pigment-cells of the nature of an epithelium, but this evidently does not concern the present question. What then, you will ask, is the disease to which authors refer when they speak of aquo-capsulitis? What is the subjective symptom concerning the morbid anatomy of which they have erred? It is the object of this lecture to prove that it is merely corneitis.

"You will find that the symptoms said to be pathognomonic of 'aquo-capsulitis,' are a mottled appearance, or peculiar kind of opacity, on the back of the cornea (considered most characteristic), muddiness of the aqueous humor, more or less disease of the iris, with occasional closure of the pupil, increased vascularity of the sclerotica and conjunctiva. Let me analyze these.

"In inflammation of the eyeball we do meet with opacities at the posterior part of the cornea arranged in a peculiar manner. We see milky spots, varying in size from that of a pin's head to a degree of minuteness that evades detection by the naked eye, and, please to notice particularly, of the nature and precise seat of which we have no certain knowledge; one theory ascribing them to punctiform depositions of lymph in the posterior elastic lamina, or between it and the true cornea, either of which is likely; another, that is truly very extravagant, to tuberculous deposit in the epithelium behind the elastic lamina. But spots or opacities invade also other parts of the cornea, and occur at all depths, and therefore in all its textures, although the more anterior of them are less definite in outline, and generally less white. Can there, however, be any difficulty, in attributing this slight dissimilarity to the anatomical arrangement of the part? You know that the membrane of Descemet, and its epithelium, differ from the anterior elastic lamina and the epithelium over the cornea. Surely we do not require to admit the existence of a serous membrane to account for this difference.

"I find that those who dwell most on 'aquo-capsulitis' lay great stress on the back of the cornea being often alone diseased. But this is only partly true, since the disease when so situated is generally only in its commencement, and a close examination will, in most instances, detect more disease in and about the eye than was at first suspected. Again, we as frequently, or more so, find vascular opacities and ulcer on other parts of the cornea, remaining long isolated. Unquestionably, the most common state of things is for the greater part of the cornea to become more or less diseased after the posterior part has been thus invaded. Minute ulcerations on the surface, general opacity or vascularity, or all these, with different degrees of vascularity of the conjunctiva and sclerotica, supervene. It follows, I think, of necessity, that in all cases of corneitis implicating the entire thickness of the cornea, that there must be posteriorly the punctiform patches. The anterior opacity necessarily obscures them more or less. I have often, under such circumstances, looked in vain for them with the naked eye, and even with a condensed light, when with a lens of high power I have distinguished numbers of them from the more anterior spots. I must beg you, however, to observe the fact, that the front of the cornea may be diseased and ulcerated for months, without the back being affected.

"Let me pass next to the 'muddiness of the aqueous humor, and the implication of the iris.'

"There is no more common error in the diagnosis of ophthalmic diseases than when there is inflammation of the cornea, for it is to be supposed that the aqueous humor is turbid, and the iris dull and diseased. This is in no slight degree due to the theory abroad, about the chambers of the eye being lined by a serous membrane, but chiefly to the fact, that all objects viewed through a cornea, more or less opaque, must necessarily be more or less obscured. I assure you, after no inconsiderable acquaintance with diseases of the eye, I am not familiar with turbidness of the aqueous humor, coexistent with transparency of the smallest portion of the cornea, except where a degenerated lens that has become fluid has escaped, after an operation, from its capsule, and admixing with the humor, produced discoloration.

"In slight primary attacks of corneitis of a subacute or chronic form, where it has been possible to ascertain the actual state of the iris, I have never known this structure to be diseased. Numerous are the instances in which I have pointed out the immunity to students, when at a first glance it seemed very dull, and the pupil adherent, a spot less opaque than the rest, or a clear spot near the margin of the cornea having enabled me to correct the deception. Many times when the cornea has been generally too dull to permit a clear view of its state, and to all appearance it has been diseased, the quick and complete dilatation of the pupil under the employment of atrophine has proved that the cornea alone was in an abnormal condition. I have even seen deposits of what I supposed to be lymph at the margin of the cornea, in tubercles at four points corresponding to the vertical and transverse axes, and the iris remain healthy. Bear in mind, however, that disease of any part of the eye may be consecutive to chronic corneitis; the unhealthy action may, so to speak, travel backwards; but I believe that this is rare.

"When, however, there is acute inflammation of the cornea, and this for the most part is due to traumatic causes, the iris is frequently involved. There is then inflammation of the eyeball, certainly of its anterior part, and now any inflammatory product may be thrown out in the anterior chamber. Conversely, the cornea is frequently affected in iritis of constitutional origin, and in all degrees, from a few spots on its posterior part, to disorganizing inflammation; and consecutively also in other diseases of the eyeball. I suspect that very frequently, when, among the remains of inflammation of the eyeball, there exist punctiform opacities at the back of the cornea, it is inferred that the primary affection has been 'aquo-capsulitis.' I have very recently had sent to me for an opinion, by Mr. Shaul, of Docking, a young lady, whose eyes would likely enough be thought to exhibit an excellent example of this. In the right eye, which was affected nearly three years ago, all activity of disease has passed away, and there remain at the back of the cornea the well-marked, opaque, characteristic spots: adhesion of the entire pupil to the capsule of the lens; a lead-colored iris, and a discolored sclerótica. In the left eye, which was diseased at a later date, there is similar implication, but to a very much less degree. Here the first symptoms were those of choroiditis.

"I need not detain you long in alluding to the vascularity of the eye that is described in connection with 'aquo-capsulitis,' as it is the usual injection of the conjunctiva and sclerótica that exists in corneitis, varying, of course, in intensity in different cases."

ART. 85—*The use of Ice after operations upon the Eye.* By M. MAGNE.

(*Gaz. Méd. de Paris*, Sept. 22, 1855.)

In this paper several cases are related for the purpose of showing that consecutive inflammation may be altogether prevented in operations for cataract, &c., by applying ice to the eye immediately after the operation, and continuing the application for three or four days. The compress is soaked in iced water, and over this is placed a piece of ice enclosed in a small bag of some waterproof material, care being taken to prevent the ice from coming in immediate contact with the skin.

This idea is not new. On the contrary, it has been put in practice by M. Baudens, and also by MM. Chassaignac and Guernsent.

ART. 86.—*Knife-needle for the operation for Cataract by solution or absorption.*
By Dr. ISAAC HAYS.

(*American Quarterly Journal of Medicine*, July, 1855.)

The operation for the removal of cataract by solution or absorption, has been deemed, by many surgeons, entirely inapplicable to hard cataracts, mainly in consequence of the difficulty of dividing such a lens by the needle ordinarily used for the purpose. The common straight needle cannot be made to cut well, beyond a short distance from the point, without being so thin as to endanger its breaking; and it is not possible to cut with a curved needle. This difficulty, however, is met by a needle made somewhat after the fashion of an iris knife, and it is now more than three years since Dr. Hays has carried this idea into successful practice.

"This instrument, from the point to the bead near the handle, is six tenths of an inch, its cutting edge is nearly four tenths of an inch. The back is straight to near the point, where it is truncated, so as to make the point stronger, but at the same time leaving it very acute; and the edge of this truncated portion of the back is made to cut. The remainder of the back is simply rounded off. The cutting edge is perfectly straight, and is made to cut up to the part where the instrument becomes round. This portion requires to be carefully constructed, so that as the instrument enters the eye it shall fill up the incision, and thus prevent the escape of the aqueous humor. The handle should be octagonal, with equal sides, and of the same thickness its whole length.

"We have now used the knife-needle in a sufficient number of cases to be convinced of its superiority over any of the ordinary cataract needles."

ART. 87.—*A new operation for Ectropion.* By M. NELATON.

(*Lancet*, Oct. 6, 1855.)

The subject of this operation was a child affected with this deformity on each side, but the left upper lid was the worst. The eye was half open, and the cornea exposed; the free margin of the lid and the cilia were turned towards the eyebrow, and the tarsal cartilage was luxated in such a way that its superior border had become inferior. The cause of this state of things could not be learned, but it was suspected that a burn was the origin of it, as the skin was retracted and puckered. The external portion of the lid had escaped, but the destruction was complete towards the inner canthus, the free margin being only a few lines from the eyebrow.

M. Nelaton, considering that nodular retraction lasts only a certain time, judged that, by stretching the parts for the space of about one year, a cicatrix might be obtained which would have lost the tendency to contraction. He therefore made a horizontal incision in the groove which separates the eyebrow from the upper lid, and the latter, having thus been freed, was brought in contact with the lower lid. The margins of the upper and lower palpebræ were then pared, for the space of about four lines external to the punctum, and kept together by three stitches. In order to reduce the luxated tarsal cartilage, a strong needle was passed from below upwards through the lower lid and the cartilage, and the two parts were thus kept *in situ*. The stitches were removed three days after the operation, and the needle two days later.

The immediate results of the operation were satisfactory. The margins of the lids adhered completely on the internal half of the palpebral fissure, the external half being open, and allowing the mucous secretion to escape. The upper lid was, in this external half, noticed to ride somewhat on the lower—a circumstance which was ascribed to œdema; and as granulations were suspected on the conjunctiva, M. Nelaton cauterized with the nitrate of silver. These proceedings were completed on the 4th of February, 1854, and the patient was then freed from all constraint, and expected to spend a year at least before an effort should be made to break up the union of the lids, when retraction might no longer be

apprehended, and the ectropion be completely cured. Typhoid fever, however, carried off the patient two months after the operation, hence its results could not be ascertained. We are afraid the cornea would have been found somewhat injured by the protracted immobility, nor is it at all improbable that unpleasant adhesions might have formed.

ART. 88.—*On the cure of Myopia and Presbyopia by exercising the vision.*
By M. JOBERT.

(*Archiv. G n rales de M d.* Aug. 1855.)

In a memoir recently brought before the Academy of Science at Paris, M. Jobert maintains that a far-sighted or near-sighted person may acquire the perfect power of focusing the eye by mere practice. This, he tells us, is the result of his own personal experience. His theory is that the muscles which regulate the focal adjustment of the eye are unable to discharge their proper function in these cases, and that they acquire the tone necessary to do this by practice. He condemns altogether the use of spectacles, because spectacles render the mischief permanent by dispensing with the aid of the muscles which ought to be in action.

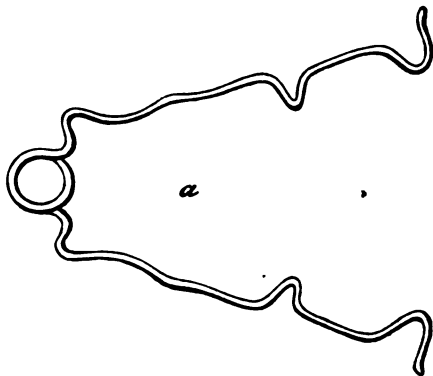
ART. 89.—*On the treatment of Strabismus.* By Mr. CRITCHETT, Surgeon to the London Ophthalmic Hospital.

(*Lancet*, May 12 and May 19, 1855.)

The chief object of this paper is to set forth the advantages of a particular form of the subconjunctival operation. Speaking of the results of its adoption, Mr. Critchett says, "after having tried it in above a hundred cases, I never now adopt the old method, and I am strongly impressed with the uniformity of the favorable result; in no cases have I had increased prominence or eversion. In some cases, it is true, some amount of inversion has remained, but this occurred at least as frequently with the old operation; so that the patient is now sure of improvement from the operation, without risking the occurrence of any of the unfavorable concomitants of the old plan."

The operation is described as follows:

Fig. 1.

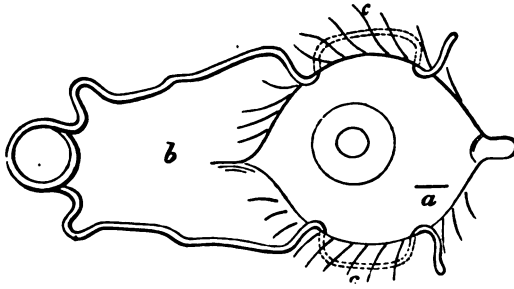


a. Speculum.

Having placed the patient, if nervous or restless, or very young, under the influence of chloroform, the eyelids must be fixed open with a spring speculum (Fig. 1, a); the globe may be now everted by an assistant, and the operator, seizing the conjunctiva at a point corresponding to the lower border of the internal rectus, makes a small opening with a pair of rather strong blunt-pointed

scissors (Fig. 3, *g*), he then seizes the subconjunctival fascia, and divides it to the same extent, so as clearly and cleanly to expose a small surface of sclerotic.

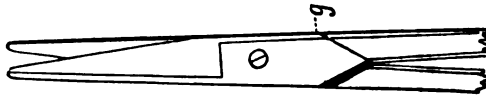
Fig. 2.



b, *a*. Speculum in action, the dotted lines representing it under the lids.
a. Situation and size of incision in conjunctiva.

The ordinary strabismus blunt hook (Fig. 4, *e*), bent at a right angle, must now be swept round the globe, so as to pass beneath the muscle; this may be known by the peculiar elastic resistance that is felt; the blades of the scissors must then

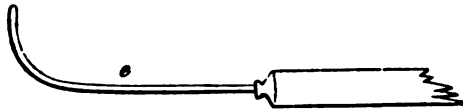
Fig. 3.



g. Strabismus scissors.

be passed in through the opening, and by a succession of small cuts the tendon may be readily divided between the hook and the insertion into the sclerotic, and close to the latter (Fig. 5, *f*). You may distinctly feel and sometimes hear

Fig. 4.

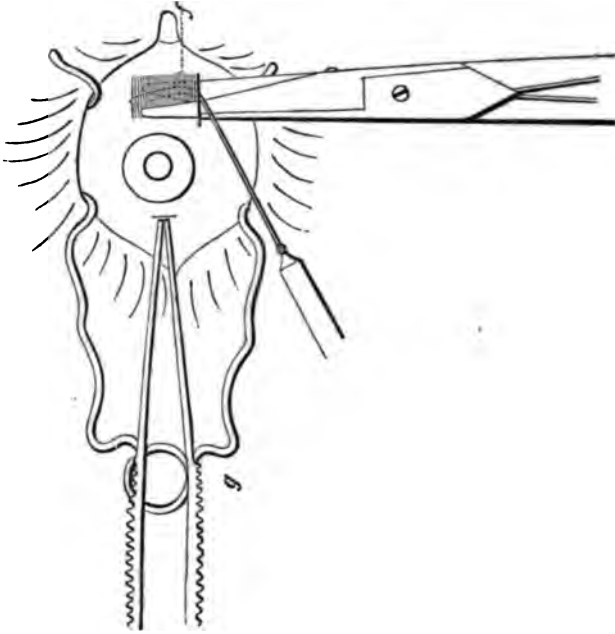


e. Strabismus hook.

the creak of the scissors as the tendon is cut through. Some little difficulty is sometimes experienced, when the insertion of the tendon is rather broad, in reaching its upper edge, and when that is the case I make a small counter-opening in the conjunctiva corresponding to the upper border of the muscle. I introduce the hook from above, and, having passed it beneath the remaining slip of tendon, divide it with the scissors in the same direction. This counter-opening has the advantage of facilitating the escape of blood that has become infiltrated beneath the conjunctiva, and it does not in any way interfere with the principle and aim of the operation, which is to leave a broad band of conjunctiva between the cornea and the inner caruncle intact. The advantages of this plan, as contrasted with the old one, seem to me to be very great. It has, in the first place, the merit enjoyed by all subcutaneous sections, of immunity from inflammation and suppuration, and makes a very rapid and certain cure; no granulation ever forms, and the caruncle maintains its natural position, and does not shrink away into a deep fossa, as is invariably the case when the usual operation

has been performed; and as far as my experience yet goes, proptosis or increased prominence of the eye is more rare, and eversion never occurs, and the natural movements of the eye are more complete. This I attribute to the fact that the ocular fascia is but little interfered with, and that a good firm union takes place between the divided muscle and the globe of the eye.

Fig. 5.



f. Hook and scissors in action under conjunctiva.

"Such seem to me to be the advantages of the mode of operating that I am now anxious to explain and recommend—advantages that are of so important a nature, that in fairly stating the case to the patient, if the old operation is contemplated, it certainly admits of doubt if the personal appearance is much improved, even in the most favorable results, and there is always a risk of increased prominence and of eversion, and it admits of a question whether it can be recommended. If, on the other hand, the mode of proceeding I am now setting forth be in contemplation, we may at least feel assured, that if the deformity is not altogether removed, it will not be rendered worse, and that in many cases the result will be so perfect, that the most experienced eye will not detect any defect, or be aware that any operation has been performed. But it may be asked if there are any objections to this operation, and any cases in which the old operation is preferable. It must be admitted that it is rather more difficult to perform, that there is a greater liability to leave some portion undivided, and that sometimes some inversion remains, in consequence of the attachment of the muscle to the fascia after it is divided from the sclerotic. This will often rectify itself afterwards, and where this is not the case, it is better either to operate on the other eye, or, if the cast is slight, be content to leave the case in that state, rather than risk eversion by further interference. It is only in cases of long standing, and where the strabismus is very extreme, and where the eye is small and deep-set, and where the subconjunctival operation produces but very little effect, that the old operation is justifiable."

ART. 90.—*Double spontaneous dislocation of the Crystalline Lens.* By Dr. WILLIAMS.

(American Quarterly Journal of Med. Science, April, 1855.)

This curious case is taken from the Records of the Boston Society for Medical Improvement. There was no loss of transparency, though the accident was frequently repeated:—

CASE.—A female, æt. 30, of feeble constitution. At an early age she had measles, scarlatina, and variola, in immediate succession. Her sight has always been imperfect, and she has been able to see small objects—as in reading or sewing—only when held very near her eyes.

On the 8th of June last, she saw a circle—light in the centre, dark around its edges—which interfered with vision in her right eye; but no other change was observed till about a week before she was seen by Dr. Williams. At this time in stooping to lift a tub, she was conscious that something occurred in her right eye, and soon experienced circumorbital pain and nausea. She afterward noticed a peculiar appearance in the anterior chamber. During the night these symptoms vanished; but vision was not as good the following day, as it had previously been. The same phenomena were repeated on subsequent days, after she had stooped forward.

When seen by Dr. W., on the 14th of November, in consultation with Dr. William H. Page, the appearances were as follows:—The right anterior chamber exhibited the crystalline lens in a perfectly transparent state, resembling, at first sight, a drop of oil between the cornea and the iris. Its weight caused the formation of a sort of pouch at the lower part of the iris, so that the lower edge of the lens was a line or more below the cornea, and its upper edge extended to rather above the middle of the pupil. The edge of the lens was sharply defined, as much so as that of a perfect cataract-glass of one inch focus. No attachment could be seen, nor did the aspect of the pupil indicate that any attachments passed through it. There was no injection of the eye. She had a constant sensation of nausea and discomfort, but less circumorbital pain than after the first prolapsus. Vision was almost abolished; but, on trial of cataract-glasses, it was at once improved, so that with those of two inches focus she was able to read.

As the sight of the other eye was very imperfect, this was also examined. It presented a very marked floating motion of the iris, similar to what is frequently observed after operations for the removal of the lens. Displacement of the crystalline was, therefore, presumed to have occurred in this eye also, and a trial with cataract-glasses proved the correctness of this supposition, as she could at once see perfectly. The lens was not visible in this eye; but there was an appearance at the lower part of the iris as if the lens were lying in this situation, and were impelled against the iris as the globe moved. Probably a dilatation of the pupil might have allowed the lens to be seen, but it was not thought advisable to expose the patient to a risk of a similar prolapsus to that existing in the other eye. Visiting her a few days after, when the right lens had fallen back into the posterior chamber, Dr. W. found it equally impossible to perceive any portion of the lens in this, as in the left eye. She required a glass of slightly greater power for the right eye; and, by the aid of these auxiliaries, enjoyed perfect vision.

On the 9th of December, the lens, which for several days had been in the posterior chamber, fell through the pupil, as before, and continued in the anterior chamber for some time. If her head is held forward, in sewing, there is no displacement; but it is only in some unlucky moment of stooping, while engaged in active employment, that the lens is projected through the pupil.

SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(A) CONCERNING THE HEAD AND NECK.

ART. 91.—*A new method of treatment in Otorrhœa.* By Mr. YEARSLEY.

(Lancet, May 5, 1855.)

This new mode of treatment is neither more nor less than a modification of the remedy already introduced to the notice of the profession for the alleviation,

if not for the cure, of all those cases of deafness that arise from partial or entire loss of the membrana tympani—namely, *cotton-wool*. Its influence, according to Mr. Yearsley, is not limited to the mere arrest and cure of the discharge; it has this additional superiority over the usual modes of treatment, that the *sense* of hearing, so frequently impaired under the use of astringents, is, on the contrary, not only not diminished, but decidedly, and in many cases immensely, improved. The treatment is to be carried into effect as follows:

“First of all, the passage of the ear is to be carefully cleansed by gently syringing it with warm water, and the moisture removed by means of a porte-sponge. The parts are now to be so clearly displayed by the aid of a powerful gas-reflector, that the necessary manipulations may be readily and accurately accomplished, when I take a small piece of dry cotton—the size of which varies according to the circumstances of the case—and adjust it by gently pressing down every part of it upon the surface from which the discharge proceeds, exactly as if dressing an ulcer or any other surface of the body: this done, quiet is enjoined, restricting, as much as possible, every movement of the jaw, such, for instance, as takes place in eating and speaking. Twenty-four hours afterwards I remove this, and apply another dressing of the cotton. The importance of restricting the patient from moving the jaws will be at once manifest, if the reader will take the trouble to place the point of a finger in the passage of the ear, and read aloud the present paragraph. It will then be perceived how easily the cotton, however accurately adjusted, may be loosened and moved from its state of exact apposition. In eating, this detachment takes place still more readily, yet the patient cannot be debarred all the use of the jaw, seeing he must have food; nor, if great care be taken to keep the jaws in a state of motionless apposition, need speech be altogether interdicted; but for the same reason the food should be such as to require no mastication. Doubtless no one will consider these restrictions as objections to this mode of treatment; though a more specious, but equally invalid objection to it may be raised, on the ground that the tympanum being a cavity, such a degree of accuracy in adapting the cotton to its surface, as described, cannot be attained. If the ear be examined with the admirable appliances for its illumination, now at the command of the aural surgeon, it will be found, in cases where the membrana tympani is destroyed, that the extent of the surface from which the discharge proceeds, is not only exposed to view, but the cavity is observed to be obliterated, and the walls of the tympanum, red and vascular, are seen thickened and tumid, if not spongy or fungoid. I speak here more especially of the worst cases that come under the notice of aural surgeons, in the great majority of which not only is the discharge itself cured, but the patient experiences a great amelioration in the state of his hearing also. Nay, more; cases can be referred to, in which the great disorganization of the ear seemed to preclude all hope of effecting any amelioration of the hearing, yet in which, after persevering in the treatment for a greater or less period, a change has been accomplished, which could not have been confined to the fungoid tissues alone, for, in the cases I speak of, a sensible improvement of hearing has been a coetaneous result.”

Mr. Yearsley then relates four cases, of which we give two:

CASE 1.—Miss L—, pupil in the establishment of Miss Hurst, St. John's Wood, became my patient in June, 1854, suffering from a most disagreeable discharge from the right ear, which was left as one of the sequelæ of scarlatina several years ago. Considerable deafness attended the case, which varied with the state of the discharge, being greater when the latter was least abundant. On examination a small perforation existed in the membrana tympani, below the insertion of the malleus; and the walls of the meatus, near to the membrane, presented a vascular appearance, approaching to a state of semi-ulceration. Contenting myself with cleansing the meatus, by carefully syringing it out with warm water, I directed her to apply a poultice, enclosed in a linen bag, to the side of the head, including the ear, for two nights in succession, and then to visit me again. At the second visit, the irritable appearance of the meatus had subsided, and I proceeded to adjust and impact a small piece of dry cotton at

the bottom of the meatus. From day to day the same treatment was employed for upwards of a week, by which time all discharge had ceased. It was my wish to continue the application for three or four days longer, but arrangements had been made for her return to her friends for the holidays, which could not be overruled. As I feared, the result proved that the treatment was too early discontinued; for in six weeks she returned as bad as ever. This time she was instructed by her friends to attend me until the cure was complete; and this was happily effected in a period of three weeks. The discharge entirely ceased, and the hearing was perfectly restored. On examination of the membrane, no appearance of perforation remained.

CASE 2.—Mr. W——, surgeon in the navy, who had just received orders to hold himself in readiness to proceed to the Crimea, consulted me in December last for disease of the left ear, attended by a loathsome discharge. On examination, I discovered a small fleshy excrescence growing from the surface of the membrana tympani, which was very much disorganized, without any apparent perforation, though it seemed as if such a condition had at one time existed. The hearing was greatly deteriorated; but, having the sense perfect on the opposite side, he was but slightly inconvenienced. The discharge, and a sense of oppression on the affected side, were the chief sources of complaint. I explained that it would be necessary first to remove the fleshy excrescence, and that then I should proceed to relieve him by my new mode of treating cases of otorrhœa, and that such treatment would require his daily attendance for several days in succession. At that time it was inconvenient to him to remain, and he returned to his duties at the Royal Naval Hospital at Deal, until he could make arrangements and obtain leave of absence for about a fortnight in town. In the interval he was one day exposed to a cold, piercing, easterly wind, and, wishing to protect the diseased ear, he pushed into the passage of it a piece of dry cotton, of which he took no further notice.

On the 10th of January, I received a note from him to say that he had obtained leave of absence, and would visit me on the following day, which he did. On examining the ear, I said, "Why, what have you got in your ear?" "Nothing; I have done nothing to it." "Oh yes, you have," I replied; at the same time withdrawing from the ear a dry piece of cotton, which had evidently been impacted there for several days. Again applying the speculum, I remarked: "The fleshy excrescence has disappeared, and you have unintentionally cured yourself of the discharge. You have absolutely cured yourself upon the principle of treatment of which I told you at your last visit. The piece of cotton I have just extracted has by some good luck been pushed down upon the seat of disease; its pressure has dissipated the excrescence, and with it the discharge has vanished." His astonishment was succeeded by an immoderate fit of laughter, which was thus accounted for: A surgeon had examined his ear the day previously, and said, "Oh yes, I see the fleshy growth quite plain; Mr. Yearsley will have no difficulty in removing it!" So much for the opinion of surgeons unaccustomed to see diseases of the ear. The gentlemen alluded to could only have seen the pellet of cotton-wool. But more experienced surgeons than he may be deceived in regard to disease in the passage of the ear. I remember once to have removed a polypus from the ear of a young lady, the existence of which had been denied by two of the most eminent surgeons of the day.

ART. 92.—*On the significance of Ear-discharge.* By Mr. TOYNBEE, Aural Surgeon to St. Mary's Hospital.

(*Medical Times and Gazette*, Aug. 18, 1855.)

"There can, I think, be no doubt that a discharge from the ear should always be regarded with suspicion. This fact is fully borne out by an inspection of the accompanying table, showing the relation between the duration of the discharge and the acute symptoms. The cases are taken from a paper which I published in the '*Medico-Chirurgical Transactions*' for 1851:

	Age of Patient.	Duration of Discharge.	Acute Symptoms causing Death, and their duration.	Post-mortem Appearances.
<i>Disease in the base of the brain.</i>	42	35 years.	Pain in the head ending in coma; five days.	Pus in the tympanum and labyrinth and around the medulla oblongata.
	17	12 years.	Pain in the head and ear; twenty-two days.	Pus in the tympanum and labyrinth; auditory nerve of a dark color; purulent matter deposited on the medulla oblongata, crura cerebri, and pons varolii.
	44	24 years.	Paralysis of the portio-dura nerve a few days before death.	Dura mater covering the upper wall of the tympanum thick and ulcerated; bone carious; mucous membrane of tympanum ulcerated.
	21	Occasionally for 14 years.	Violent pain in the ear and head; pain in the back and body; curvature of the neck backwards; delirium five weeks.	Tympanic cavity full of pus; a large abscess in right middle cerebral lobe.
	23	14 years.	Pain in the top of the head, followed by cerebral irritation; ten months.	An abscess in the left middle lobe of cerebrum; dura mater detached from the petrous bone; the bone soft and carious.
<i>Disease in the cerebral cavity.</i>	10	5 years; also earache at times.	Headache, vomiting, chilliness, five days; was then convalescent; a day after intense pain in the ear came on, ending in death in five days.	An abscess as large as a small hen's egg in the left middle cerebral lobe; dura mater over tympanum very thick and ulcerated; carious orifice in upper wall of tympanum; tympanic cavity full of acrofulous matter.
	Adult.	20 years.	Pain in the head for fourteen days; fever, coma, four days.	An abscess in the right middle cerebral lobe; dura mater ulcerated; upper wall of tympanum carious.
	24	3 years.	Cerebral irritation; abscess under the temporal muscle; delirium, coma; some days.	An abscess in the left middle cerebral lobe; the dura mater partly detached from the petrous bone, thick and dark colored; the bone dark, but not carious.
	14	12 years.	Severe cerebral symptoms, coma, death in a few days.	A large abscess above the petrous bone, communicating with the external meatus, through petrous bone and dura mater.

Disease in the cere- bellum and la- teral si- nus.	60	2 years, fol- lowed by in- tense pain.	Violent cerebral irritation during thirteen days.	Dura mater covering the petrous bone detached from it; and full of orifices; an abscess in cerebrium; pe- trous bone carious; tympanic cavity and vestibule full of pus.
	15	6 or 7 years.	Pain in right ear; shivering; headache; abscess behind the ear; great prostra- tion; ten days.	Coats of lateral sinus thickened; coagulum in sinus.
	45	20 years.	Pain in the left side of the head during the night only; cerebral irritation; de- lirium eight weeks.	The cavernous sinuses full of gray-colored matter; mastoid portion of temporal bone carious.
	27	Since early life.	Pain in the head, rigors, fever; an ab- scess over the mastoid process; stupor, coma, three weeks.	Lateral sinus full of pus; sulcus lateralis carious.
	20	7 years.	Shivering, headache, and pain in the right ear, followed by abscess behind it; cerebral irritation; death in ten days.	Abscess in left lobe of cerebellum; sulcus lateralis carious; pus in lateral sinus; secondary abscesses in neck and right lung.
	34	2 years.	Pain in the ear and head; convulsions; great prostration; three weeks.	Caries of meatus externus and sulcus lateralis; pus in lateral sinus and jugular vein; abscess in neck; cere- bellum soft.
	9	At intervals for 5 years.	Pain in the ear and headache; abscess behind the ear; delirium; convulsions; five weeks.	Lateral sinus full of pus; sulcus lateralis carious, and its cavity continuous with that of the tympanum; purulent deposits in the lungs.
	19	At intervals during 2 years.	Intense headache; tenderness of abdo- men, great physical prostration.	Abscess occupying nearly the whole length of the right hemisphere of cerebellum; petrous bone carious and soft; tympanum full of pus; cerebrium healthy.
	32	2 years.	Pain in the ear and side of the head; drowsiness, stupor, and coma; six weeks.	Abscess in right hemisphere of cerebellum; petrous bone carious; dura mater ulcerated.
	Adult.	16 years.	Headache, stupor, coma; a few days.	Abscess in right hemisphere of cerebellum; external meatus and petrous bone carious.

"It is true that many persons live long, having had during the whole of life a discharge from an ear, without any disease of the bone; others live many years with a discharge, but at death the bone and dura mater are found affected, and might under many circumstances, have taken upon them an active state of disease, ending in the death of the patient. It is important, therefore, that you should be able to give an opinion respecting cases of the kind.

"In the first place it behooves you to decide from what source the discharge comes. If it arise from the dermoid meatus, and the membrana tympani is entire, there is, as I have before said, most probably irritation in the tympanic cavity, or mastoid cells, of which irritation this discharge is but a symptom. Unless there were simply some eczematous state of the meatus to account for the discharge, and, unless the hearing power were perfect, such a case should be looked upon with suspicion, especially if it be attended by any symptoms of pain or cerebral irritation. Again, if the discharge issues from the tympanic cavity through a small or a valvular opening, and that it is requisite to blow the nose forcibly to clear out the tympanum, there probably is, or there will be, some affection of the bone, from the accumulation of the discharge. If there is a large orifice in the membrana tympani, or, if it is absent, if there is no ulceration of the mucous membrane of the tympanum, if there is some power of hearing remaining, and if by pressing and tapping the region around the ear, no pain is felt, and if there are no other symptoms of disease in the ear or head, I think you may assume that there is no disease of the bone, and that by attention to daily syringing, and the other plans alluded to when speaking of the treatment of these affections of the ear, there is a fair prospect of the affection remaining confined to the mucous membrane of the ear. On the other hand it is but fair for you to state, that negligence on the part of the patient, whereby the discharge would be allowed to collect so as to fill up the orifice in the membrana tympani,—a blow on the ear, an attack of fever, or any severe illness, might cause an irritation in the ear which, if neglected, might advance to the bone."

ART. 93.—*A peculiar serous discharge from the Ear after injury to the Head.* By
MR. HENRY GRAY.

(*Pathological Transactions*, vol. vi, 1855.)

The history and examination of this case appear to negative all the various theories which have been advanced in explanation of the origin of the serous discharge from the ear, as far, at least, as this case is individually concerned. A short epitome of these are subjoined.

Dr. Laugier, in 1835, supposed that the fluid was the serosity of the blood (extravasated between the bone and dura mater) which filtered through a chink in the os petrosum, passed into the cavity of the tympanum, and from thence into the external auditory canal.

That it was the serous secretion from the cavity of the arachnoid.—Guthrie, 1842.

Marjolin supposed that it was the liquor Coturnii.

Chassaignac (1850) that it was the serum of the blood filtered through an abrasion of one of the venous sinuses in connection with the fractured temporal bone.

In 1850, Nelaton, Auguste Berard, and Robert, in France, Hilton and Prescott Hewett, in England, believed it to be the subarachnoidean fluid escaping through a rupture of the arachnoid membrane and fracture, implicating the auditory canal and communicating with the tympanum.

That it is the saliva passing into the tympanum, through the Eustachian tube.

A man, æt. 45, who, up to the time of the present accident had enjoyed uninterrupted good health, was admitted into St. George's Hospital under Mr. Cutler, on the morning of the 18th of October, 1854, having fallen from a ladder twenty feet in height a short time before his admission. It was stated that he was stunned for a few minutes after the accident; he soon rallied, however, and his comrades, on picking him up, observed a bloody watery discharge flowing from

the left ear. He walked into the hospital, where the attention of those present was soon called to this discharge. A small wound was found at the back part of the head, on the right side; he was quite sensible, and answered most questions readily.

On the 19th, he was still sensible, but he had no recollection of the accident; the discharge from the ear continued, and to such an amount, that two ounces was collected in less than an hour.

On the 20th, he became very restless, delirium came on, the pulse increased in frequency, but there was much less discharge from the ear. He was bled to nine ounces; but in the evening, although the pulse was softer, it did not diminish in frequency, the restlessness continued, and rather more serous discharge was poured from the ear.

On the 21st and 22d, diffuse inflammation of the areolar tissue of the scalp came on, which, notwithstanding the usual treatment, did not subside. He gradually sank, and died October 25th, seven days after the receipt of the injury.

The discharge, varying somewhat in quantity, continued from the time of the accident until the day previous to his death. Its quantity was so great that it saturated the pillow-case, and it became necessary to have napkins placed under the ear. It was repeatedly collected in gallipots, and was always found to be mixed with a minute quantity of blood. After being allowed to stand for a while, the blood-globules subsided to the bottom, forming a very thin layer of coagulum, the supernatant fluid still retaining a slightly roseate hue. On the day previous to his death it was mixed with pus. The discharge, when tested, was found to contain a large quantity of albumen; but no chemical analysis was undertaken, as its admixture with blood would have rendered the results fallacious.

On the post-mortem examination being made, a fracture was detected, commencing in the centre of the right cerebral fossa of the occipital bone, and just opposite to the wound already mentioned as situated in this region, it passed down through the corresponding cerebellar fossa, where it subdivided into two fissures, the innermost of which passed into the right margin of the foramen magnum, the outermost into the back part of the right jugular foramen. The triangular portion of bone included between these two fissures was comminuted. Another separate line of fracture commenced in the left margin of the foramen magnum, it passed obliquely outwards and forwards through the groove for the lateral sinus, and terminated at the back part of the left jugular foramen, so that the fracture did not encroach upon the temporal bone. This bone being now removed, together with portions of the occipital and sphenoid bones, the dura mater and other soft parts were detached from its various surfaces, and the bone was minutely examined, but no fracture could be detected in any part. This examination was carefully repeated, and at different times, but still no lesion of the bone could be discovered. The internal auditory canal was now examined; the tube of the arachnoid membrane accompanying the seventh pair of nerves was quite normal, but a minute quantity of blood was found in the subarachnoid tissue surrounding the nerves. The cochlea, vestibule, and semicircular canals were then examined; they were healthy. On laying open the tympanum, its cavity was full of a thick tenacious muco-purulent fluid, and a similar secretion was found at the tympanic orifice of the Eustachian tube, and also in the mastoid cells. On washing this away, the lining membrane of the tympanum was found to be intensely vascular. In the Eustachian tube this vascularity ceased at the tympanic orifice, but the membrane lining the mastoid cells was as vascular as that lining the tympanum. The ossicula were healthy, and presented their usual arrangement; the stapes was firmly lodged in the fenestra ovalis; the fenestra rotunda was covered by its peculiar membrane. There was consequently no communication between the internal ear and the tympanum. The membrana tympani was ruptured: the aperture, about the size of a small pea, was situated at its anterior and inferior angle.

ART. 94.—*The effects of accumulations of Cerumen.* By MR. TOYNBEE, F.R.S.
(*Pathological Transactions*, vol. vi, 1855.)

These effects are sometimes serious. They may be enumerated as follows:

1. Simple dilatation of the meatus.

2. Absorption of the posterior wall, so as to allow of a communication between the cavity of the meatus and the mastoid cells.
3. Absorption of the anterior wall, so as to cause an orifice communicating with the fossa parotidea.
4. Absorption of the superior wall, producing an aperture into the tympanic cavity.
5. Pressure upon the outer surface of the membrana tympani, rendering it extremely concave.
6. Inflammation and thickening of the membrana tympani.
7. Perforation of the membrana tympani.
8. Perforation of the membrana tympani, and protrusion of the cerumen into the tympanic cavity through the orifice.

ART. 95.—*A new artificial Membrana Tympani.* By Mr. THOMAS WESTROPP.

(*Assoc. Med. Journ.* Oct. 12, 1855.)

This contrivance is thus described:—"In the first place, my contrivance is a tube, very thin in texture, very pliant and durable in material, with a flat vibrating membrane at one end, the other extremity being open to admit the entrance of sonorous undulations. It is thus made: having accurately inspected the meatus, into which we desire to insert an artificial membrane, we must make a model of it in some hard timber (a cast is out of the question.—I frequently failed in the attempt); this model should be almost as perfect as a cast itself, though not too tight for the meatus; its end should be rather flat, and the circular edge nicely rounded off; the whole should be smooth and polished; this model, or, if we like to term it, timber cast, previously oiled, should be repeatedly dipped into a thin solution of gutta percha in chloroform till a film of sufficient thickness be formed to peel off in one unbroken piece; if the tympanal end of the timber model be of greater diameter than its centre (after the manner of the meatus itself, but this is not absolutely essential), it will be necessary to make a small slit in the side with a knife, but the incision should not approach within a quarter of an inch of the extremity, where the flat membranous part lies. This tube, if found of unequal thickness in any position, a slight coating of the solution may be applied so as to remedy the deficiency; if the timber cast, or model, has been properly made, and all successive steps accurately carried out, the membrane, when cut with a pair of scissors to the required length, will be found to fit the meatus pretty comfortably, and when oiled and coated with cerumen, to exclude the external air from the *cavitas tympani*. The tube itself should not be allowed to protrude, but should be cut obliquely, so as to lie entirely within the meatus. It easily adapts itself to the parts; the flat end lies at the proper angle in the site of the lost membrane, or on its remains. When it becomes advisable to clean its surface, it can be easily taken out by the patient with a small tweezers, washed, oiled, and reinserted; if found to fit, two or three of the same size should be made, and given to the patient, who should be taught how to use them.

"In conclusion, I must remark that though my contrivance for supplying an artificial *membrana tympani* is simple, still I do not expect that every person who tries to make or adjust them will succeed at first; it requires much practice. They will as often fail as succeed in the attempt to construct a perfect membrane, as it is a difficult matter to hit upon the proper thickness of the membranous tube. The solution of gutta-percha requires to have a certain consistency and no more; it should be rather thin, so as not to coat the timber model irregularly, and to allow of its spreading evenly over its surface; each coating should be allowed to dry perfectly: this must be repeated six or eight times during a space of two or three days. The tube should not be taken off when too thin in its substance, or it will tear; it should not be made too thick, or it will be hard, tough, and irritate the meatus; but it should be about as thick as very fine sheet gutta-percha, or oil-skin: it is then pliable, soft to the ear, and will easily vibrate when adjusted; in short, the thinner it is made consistently with durability the better."

(B) CONCERNING THE CHEST, ABDOMEN, AND PELVIS.

ART. 96.—*A curious case.* By Mr. WILLIAM COLLES, Surgeon to Steevens' Hospital.

(*Dublin Quarterly Jour. of Medicine*, May, 1855.)

The peculiarity of this case is, that death was occasioned by a fish-bone (the pre-operculum of a herring) sticking in the throat and piercing the aorta through the œsophagus.

CASE.—John Bryan, æt. 56, a laborer, was admitted into Steevens' Hospital, March 30, 1855. About three or four o'clock the day previous to his admission, while eating his dinner, he swallowed a fish-bone, which, he states, he felt cutting him very much at the time "in his chest" (his own words), the cutting pain being increased exceedingly by the act of swallowing. Immediately after, he commenced to spit up large quantities of blood of a dark color, which, however, soon changed its character, being bright red. He did not apply for admission into hospital till twelve o'clock the next day. He then complained of acute pain in his chest, and of great weakness. He had a blanched appearance, and a decidedly hemorrhagic pulse. Immediately after his admission he vomited up a fishbone about an inch long, of a very irregular shape, having a number of sharp points, and cutting edges. He continued to vomit up a good deal of blood throughout the day, but not so much as at first; the quantity gradually diminishing until nine o'clock the same evening, when he died.

Post-mortem appearances.—On opening the thorax, about three ounces of red-dish-colored serum were found in each pleural cavity, and about an ounce of fluid of a similar appearance in the pericardium. The posterior mediastinum was filled with coagulated blood. Upon removing the œsophagus and slitting it up, there was seen upon its posterior wall an oblong irregular opening, about half an inch in length from above downwards; the opening corresponding with the termination of the descending portion of the arch of the aorta, through which there was a slit, or tear, exactly opposite to that in the œsophagus, but differing from it in being smaller and more irregular. Upon examining the abdomen, a large clot of blood was found in the stomach, and the small intestines were filled with a similar fluid.

ART. 97.—*Gunshot wound of the Heart.* By Dr. CARNOCHAN, Surgeon-in-Chief to the State Hospital, New York.

(*American Medical Monthly*, April, 1855)

This case is one to be added to the few already on authentic record showing that penetrating wounds of the heart are not always immediately mortal. It has, moreover, peculiar features which will render it remarkable in the annals of surgical pathology. Several cases are mentioned in which patients have survived one or more days the effects of penetrating and non-penetrating wounds of the heart, inflicted by cutting instruments, and also of non-penetrating wounds inflicted by gunshot. But the peculiarity of this case is, that although the wound was a penetrating gunshot wound, leaving the ball deeply buried in the tissue of the heart, the patient survived for a period of time so long as to encourage the hope of recovery. This position of the ball distinguishes the case from that mentioned by the French surgeon, Latour, where the ball had not penetrated deeply into the heart, but rested on its surface, partially encroaching upon the muscular wall, and being enveloped partly by the pericardium. The autopsy of this case also revealed that the wound was not only closed and cicatrized, but that a cyst was in process of formation around the ball. By this case, also, it is established that hemorrhage is not necessarily a consequence of a gunshot wound of the heart; for the serum found in the pericardium was merely tinged with blood, and there was no coagulum. The absence of hemorrhage may be accounted for by the conical shape of the ball, and by its direction; two circumstances which favored its passage between the muscular fibres of the superficial layer of

the heart, without severing them, and caused it to rest slantingly behind the anterior coronary artery, without wounding it.

On the 27th of February, 1855, I was called in consultation to see William Poole, a young man, æt. 33, of unusually athletic form and muscular development, who had been wounded two days previously in an affray with firearms. He had received a bullet wound in the outer aspect of the right thigh, two inches above the upper border of the patella. The wound, however, which created alarm among his friends, was situated upon the anterior wall of the thorax, about three quarters of an inch to the left of the mesial line, and about half an inch below a line drawn across the chest, from one nipple to the other. A bullet probe could be passed slantingly from right to left, along the track of the wound, for about an inch. At this depth the probe was arrested, and it was not thought expedient to use force in making further exploration. Poole received his wounds during a deliberate onslaught made on him by some five or six persons armed with Colt's revolvers. The first ball took effect on the right thigh, and brought him to the ground. While thus prostrate, another assailant placed the muzzle of a pistol close to his chest, and discharged its contents. He immediately jumped up, and reeling towards a door, rested, as if stunned, against it for support, during some minutes. He then fell, exclaiming that he was dying, and remained senseless, cold, almost pulseless, and apparently moribund, for about four hours. From this condition he rallied, and became so free from the usual symptoms of severe injury, that his medical adviser, Dr. Putnam, considered that the ball had really not penetrated into the thoracic cavity, and my opinion was sought to corroborate or dispel this favorable view of the case.

I found him sitting in bed, his back resting on pillows as a support, apparently at ease, and conversing with numerous acquaintances, who had come to visit him. His countenance exhibited no expression of anxiety, and he answered placidly and without effort the questions I put to him. His pulse was 80 in the minute, the respiration easy, the surface of the body normal in temperature and moist. The stethoscope revealed the existence of no difficulty in the respiratory passages, and the normal *tic-tac* of the heart beat with healthy precision. There were no signs of inflammation, or of effusion into the pericardium.

With such freedom from morbid symptoms, I was disposed to concur with his medical adviser in auguring favorably of the case; for although it might be inferred, from the external character of the wound, that the ball had passed somewhere into the cavity of the chest, it was not impossible that it had become lodged in some position where it remained innocuous.

The previous treatment had been gently antiphlogistic; mild aperients, diaphoretics, acidulated drinks, and low diet. The consultation resulted in a continuation of a similar mode of treatment, with the injunction that he should be kept in a state of absolute bodily rest, and free from every cause of mental excitement, as I felt far from certain that he had not sustained mortal injury.

The symptoms in Poole's case illustrate in a remarkable degree some of the peculiarities of wounds of the heart, and also the assertion made by Harvey, that the heart is not very sensible. I am informed by Dr. Putnam, who saw him at one o'clock on the morning of the 25th, about fifteen minutes after the wound was received, that the patient was at first nearly pulseless, was insensible, and that respiration was performed with great difficulty. In this condition laboring also under the ordinary signs of shock to the system from a gunshot wound, he continued for about four hours, before any signs of reaction were manifested. Vomiting now occurred; this was followed by increased action of the heart, and sensibility gradually returned.

During the same day (25th) he continued improving; and on the evening visit, the pulse beat 84. The skin was moist and natural, tongue healthy, with no unfavorable symptoms otherwise. No external hemorrhage had occurred from the wound, nor had any evidences of internal hemorrhage been evinced by vomiting or expectoration.

26th.—The wound was examined more particularly, and no traces of the bullet could be found, nor any special indications manifested of its presence in the cavity of the thorax. Symptoms about the same.

27th.—I saw the patient for the first time, and found him in the favorable condition already stated.

28th.—Complained of slight headache; pulse 86; bowels not having been moved, a gentle aperient was ordered, by which the pain in the head was relieved. At times the patient had complained of transient, and slight pain about the region of the heart.

March 1st.—Was called in to see patient a second time. Had slept well; pulse 80; respiration natural; appetite good; skin moist; action of the heart natural. He stated that he felt no pain or unpleasant symptom, except weakness, remarking, however, that he felt well enough to go out.

2d.—The patient perfectly comfortable; pulse 82.

3d.—Patient so well that, upon visiting him, for the third time, by request, he was found receiving his friends, and, contrary to previous injunctions, conversing freely with them. Enjoined repose.

4th.—No untoward sign connected with either the functions of circulation or respiration. During the day, he received, against positive orders, the visits of more than a hundred people, with whom he conversed. His own statement was that he felt quite well.

5th.—Dr. Putnam was sent for early in the morning. At 8 o'clock A.M., the patient was found in a high state of irritability; pulse 120; skin hot and dry, and complains of pain generally; respiration troubled and more frequent. An aperient was ordered, by which the symptoms were much alleviated.

6th.—Was again requested to see the patient. Pulse 100; countenance anxious; the adnata tinged yellow; complained of debility, but said he had no pain about the heart; signs of effusion.

7th.—Passed a restless night, notwithstanding the administration of an anodyne; pulse 120; countenance more anxious; respiration much troubled; inability to remain in the recumbent posture; symptoms gradually becoming more grave.

At 2 A.M., Thursday morning, his attending physician was sent for. The patient was now rapidly sinking: pulse almost imperceptible, and with difficulty counted; respiration short, frequent, and difficult; extremities cold; countenance pallid and hippocratic. From this time he continued to sink, and expired, without a struggle, at five o'clock.

Autopsy seven hours after death. The body was in a state of perfect preservation, and showed a powerful and well-developed organization. The surface of the body presented three orifices of gunshot wounds: two on the external side of the right thigh, a short distance above the patella, by which, apparently, a ball had made its entrance and exit respectively; and one on the anterior aspect of the chest, three quarters of an inch to the left of the median line, and about half an inch below a line drawn across the chest, from one nipple to the other. The examination revealed that all the organs of the body were in a healthy condition. The sternum and cartilages of the ribs having been partially elevated, a bullet-probe could be passed without difficulty, slanting from right to left, through the wall of the thorax, at the place of junction of the cartilages of the fifth and sixth ribs with the margin of the sternum. The sternum being completely elevated, the pericardium was seen to be much distended, and on its surface, in continuation with the external wound, was observed a rough spot, which proved to be an opening into the cavity of the pericardium, thinly closed by the exudation of plastic material. The right and left cavities of the pleura were free from effusion, and the lung on each side was in a sound condition. The pericardium was found filled with serous fluid, tinged with blood, and was so distended that it encroached very much upon the lungs on both sides. Upon opening the sac of the pericardium, and removing the large quantity of serous fluid, the external surface of the heart and the serous lining of the pericardium were both found to be entirely covered with plastic exudation, presenting all over signs of high inflammatory action. A cursory examination of the heart in position did not disclose the presence of any foreign body. It was afterwards taken out, and, upon a careful examination, a bullet, one inch in circumference, was found enveloped in a delicate cyst, and imbedded, to the depth of a quarter of an inch, in the muscular tissue of the septum, between the right and left ventricles,

about midway between the apex of the heart and the base of the ventricles. Its locality was only indicated by the sense of touch, for as the wound had entirely cicatrized, there was no outward visible sign of its presence. Obviously, the cause of death was inflammation of the pericardium and heart, and its results.

ART. 98.—*On wounds of the Heart.* By Dr. PURPLE.

(*New York Journal of Medicine*, May, 1855.)

The following conclusions are deduced from a very elaborate and careful paper containing the particulars of forty-two recorded cases of wounds of the heart:

"That wounds of the heart are not in general immediately fatal.

"That recovery after severe gunshot, incised, and punctured wounds of the heart is possible, and that, too, amounting almost to a probability, provided a careful and judicious treatment is faithfully carried out.

"That the presence of a leaden ball imbedded in the walls of a ventricle of the heart does not preclude the possibility of recovery, and is not incompatible with the continuance of life for a number of years.

"That it is possible for an incised wound of the heart to heal by first intention, and the patient afterward be able to continue a laborious occupation for years after with no severe manifestations of heart disease.

"That the presence of a foreign body, other than a leaden ball, of considerable size, in the walls or cavities of the heart, does not necessarily preclude the possibility of a continuance of life for a number of days.

"That the prognosis of all wounds of the heart is unfavorable, but that in some cases hopes of recovery may be entertained, provided the patient's constitution be good, and efficient treatment be early resorted to.

"That the proper treatment of wounds of the heart is that which is adapted to like wounds of the chest in general; and that the inflammatory complications must be met with the same remedies as are adapted to the management of the disease when arising from idiopathic causes.

"That all parts of the heart are not equally liable to wounds, the right ventricle being the one most frequently injured.

"That the comparative mortality of heart wounds shows that the average duration of life is greater if the left ventricle be the seat of injury. This proposition is opposed to the received opinion of almost all writers on this subject.

"That the medico-legal relations of wounds of the heart are important, and should command the surgeon's careful attention, in order that he may not jeopard the life of his patient by timidity on the one hand or temerity on the other; and thereby subject himself to the inconvenience of the raising of a false issue on the management of the case before a legal tribunal."

ART. 99.—*Ruptured Intestine after the application of the Taxis.* By Mr. NATHANIEL WARD, Assistant-Surgeon to the London Hospital.

(*Pathological Transactions*, vol. vi, 1855.)

This case is particularly interesting as showing the extreme caution that should be used in the application of the taxis, in cases of recent femoral hernia, in which the symptoms of strangulation have existed even for a few hours. It would have been much better, in fact, had it not been had recourse to at all in this case, as an immediate operation without it would possibly have saved the life of the patient.

CASE.—A laborer, æt. 56, was admitted into the London Hospital, suffering from symptoms of strangulated hernia. They had existed for forty-seven hours; and about five hours before admission the taxis had been used, without any undue amount of force, by a medical man. The result of its application was the sensible diminution of the tumor, without relief to the symptoms of obstruction. At the time of his admission there was considerable fulness in the right femoral region, and Mr. Gowland deemed it expedient to make an exploratory operation. Different layers were cut through, until, on opening what appeared to be the sac, a quantity of yellowish fluid, mixed with air-bubbles, escaped. The patient died

forty-eight hours after admission, peritonitis having supervened on the symptoms of strangulation.

A post-mortem examination was made fourteen hours and a half after death.—Evidence of acute serous inflammation existed. About an inch to the pubic side of the femoral ring, and not more than twelve or fourteen inches from the duodenum, was the portion of gut that had originally constituted the hernial protrusion. It represented about the lower two-thirds of the calibre of the intestine, and had the appearance of a prominent pouting excrescence, with a large aperture, through which a six-penny piece could have been passed into the interior of the intestine, and springing, apparently, from a constricted neck, which was the part which had evidently been girted round by the femoral ring. The walls of the apparent excrescence stood firmly out, in consequence of the inflammatory exudation that had taken place in and between its coats. The borders of the aperture were thin, ragged, and sloughy, and at its back was another small irregular aperture, with a sloughy border.

This patient had never previously been subject to rupture, and he attributed its occurrence to having received a heavy blow from a quantity of earth that fell on his back.

ART. 100.—On Strangulation in empty Hernial Sacs.

By M. CHASSAIGNAC, Surgeon to the Hospital Lariboisière.

(*Rév. Méd.-Chir. de Paris*, May, 1855.)

The evidence collected in this paper is sufficient to show, that strangulation in empty hernial sacs may give rise to all the symptoms of strangulated hernia. These symptoms are much more severe when the sac communicates with the peritoneum,—sometimes more severe than those of strangulated hernia. The sac, under these circumstances, may contain serum, pus, or blood. It collapses when punctured (and thus the absence of bowel or omentum may be detected), but it cannot always be emptied by the taxis, even when there is a communication with the peritoneum.

All the cases, as yet, have been in females.

Excision of the sac is recommended as the best mode of treatment.

CASE.—A woman, *æt.* 52, had long suffered from irreducible femoral hernia on the left side, and for which she had worn a badly-fitting truss. Symptoms of strangulation had been present from the previous evening, and signs of severe peritonitis were unquestionably present. The tumor was as large as a hen's egg, and extremely tense and tender.

M. Chassaignac operated, on the 14th of September, 1854. He divided several layers before he got to the sac, and when he had done this, he could find nothing in the sac but fluid. On puncturing with a needle, the sac completely collapsed. No communication with the peritoneum could be found when a larger opening was made.

The treatment pursued was to excise the sac, and dress the wound in the ordinary way, but without relief to the symptoms. On the contrary, the stercoraceous vomiting continued, and the patient sank in the course of the next day, apparently from general peritonitis. There was no autopsy.

Some other cases are related, but this will serve as an illustration.

ART. 101.—Acute Orchitis treated by the local application of Ice.

By Mr. CURLING, Surgeon to the London Hospital.

(*Medical Times and Gazette*, March 3, 1855.)

Cold lotions and ice have been frequently resorted to as subsidiary measures in the treatment of this affection, but we do not know that any surgeon has depended exclusively upon the local application of cold.

CASE 1.—*Acute Orchitis from a Blow (?)—Six Days' Employment of Ice—Cure.*—Thomas H—, a slight, delicate-looking lad, *æt.* 18, admitted on January 30, 1855, on account of swollen testicle. On examination, the right testicle was found much swollen, hot and red, hard and tender. It formed a nearly uniform tumor, of from twice to three times the size of the healthy gland. The body of

the testis seemed to be the part inflamed, rather than the epididymis. The boy's statement was, that it arose from a fall, with his legs separated, on the previous day; and to this statement he pertinaciously adhered. There was evident redness, however, of the tips of the urethra; and a small quantity of thin, opaque, white discharge was made to appear, on squeezing out the canal. He was in considerable pain, which increased on attempting to walk, so that he could hardly get from one room to the other. He was put to bed; the testicle was supported by means of a crutch-pad, applied transversely beneath it; the piece of bandage attached to each end of the pad was brought above the crest of the ilium, and secured around the body. Ice was applied in a bladder to the testis; and the cold was carefully maintained by using large fragments of ice, and by putting in fresh pieces as often as liquefaction took place.

Vespere.—The pain is greatly relieved; the scrotum firmly contracted; the testicle cold; and the skin covering it blanched. Tenderness is much diminished.

January 31.—He suffers but little pain; the heat and tenderness of the testicle have much diminished. Continue the ice. To take a purgative powder of calomel and jalap.

February 2.—There is now little or no pain in the testis; no excess of heat; and the tenderness is much diminished. It is decidedly softer and smaller than when he came in.

5th.—The size and tenderness of the testis have steadily diminished day by day. It now scarcely exceeds the other in bulk. Allowed to get up, and to discontinue the ice.

8th.—The testis still slightly exceeds the other in size, but feels soft and loose, and free from tenderness. Ordered a suspensory bandage, and discharged cured.

In this case the ice was used without intermission, night and day, from January 30 to February 5. With the exception of a purge, no other remedy was resorted to.

From the circumstance, that, in the above case, the gland itself, rather than the epididymis, was the part affected, Mr. Curling was inclined to think it not improbable that the lad's statement as to the cause of the disease was correct, and that it had really followed an injury. If so, its speedy cure is yet the more satisfactory, since orchitis after blows or of idiopathic occurrence is usually much more intractable than the gonorrhœal form.

In the next case, the man's statement as to a blow was probably false. No doubt the disease was gonorrhœal.

CASE 2.—Acute Orchitis after Gonorrhœa.—Three days' employment of Ice.—Cure.
—H. H.—, æt. 25, was admitted on account of swollen testicle, on February 2, 1855. He stated, that in getting out of a van he had fallen across a wheel, the edge of the wheel striking the testicle. The accident was said to have occurred on the day previously. The right testis was red, hot, and tender, and swollen, so as to form a tumor about three times the size of the healthy gland. The hard, swollen, and very tender epididymis could be felt distinctly at the outer and back part; the rest of the tumor was not so hard as in the previous case; and, from the obscure fluctuation in some spots, conveyed the impression of partial effusion within the tunica vaginalis. On the inferior aspect of the penis, just behind the corona glandis, there was an unnatural opening, through which the urine was accustomed to flow. The natural urethral orifice was also present. A little whitish discharge was present at the abnormal orifice; he admits that he has had a discharge for about a fortnight; at first thin and transparent, afterwards white and opaque. He was put to bed; a crutch pad was applied, and ice used in the same way as in the former case. Calomel with jalap, ℥j, was administered, and milk diet and beef tea ordered.

Vespere.—He feels much easier.

February 3d.—There is very little pain in the testis, and the tenderness is much diminished: the heat and redness are kept down by the cold application.

5th.—He has steadily improved since the last date. The testis has gradually decreased in size, and become less tender and painful. Complaining of damp-

ness and discomfort produced by the ice, he was allowed to discontinue its use by night. Middle diet.

8th. The testis is now very little larger than the other gland. The heat, pains, and tenderness, are quite gone. Discharged cured.

In this case, as in the former, with the exception of a purge, ice was the sole remedy employed; and from February 2d to February 5th, its use was maintained day and night with the same regularity.

In some clinical comments on the above cases, Mr. Curling directed attention to the following recommendations of this plan of treatment: 1st. Its efficacy; both of the cases having yielded quickly, and perfectly. 2d. The early and efficient relief to the pain afforded by the benumbing influence of the cold. 3d. The regular and even compression of the inflamed gland procured by the cold inducing tonic contraction of the dartos. 4th. The saving of the patient's strength by the avoidance of all depletory measures.

ART. 102.—*On Lithotrixy.* By MR. SYME, Professor of Clinical Surgery in the University of Edinburgh.

(*Lancet*, May 26, 1855.)

"My opinion regarding lithotrixy is, that, while some patients will get off more easily by it than by cutting, yet, on the whole, it is less satisfactory. Take twelve patients with stones suitable for crushing, and treat them all in this way; some will, perhaps, get off without any further trouble; but of the remainder some will suffer from irritability of the bladder; some will have a return of the symptoms, in consequence of fragments having been left to form the nuclei for subsequent concretions; while others will be set free from further trouble by death occurring within a few days after the operation. You must also take into account that there is much more practice required, in order to perform lithotrixy properly, than is necessary for lithotomy, in which ordinary surgical skill is sufficient, and that it is only in the hands of the most expert operators that lithotrixy has even the degree of safety which I have admitted, and that otherwise it is far more dangerous than lithotomy, so that every man who aspires at learning this art must lay his account with a great deal of discomfort in his early cases. On the whole, therefore, I am of opinion that the wholesome, effectual, and, I will add also, safe method of excision should in general be preferred to crushing."

ART. 103.—*On the uselessness of "Tunnelling" in the treatment of Stricture.*

By KELBURNE KING.

(*Edin. Med. Journal*, Oct. 1855.)

We take these remarks from the account of a case of supposed impermeable stricture of the urethra which was cured by dilatation.

"In surgical writings and lectures," says Dr. King, "we occasionally find it recommended to make pressure against a stricture which does not readily yield. In this way it is said absorption is promoted, the strictured part gradually reduced, and the ultimate cure greatly facilitated before the stricture has been permeated at all. This process has received the name of 'tunnelling,' and has been recommended on high authority. Now, there are doubtless many strictures which do not admit of penetration at the first attempt, and it may soothe a patient's mind to allow him to suppose that these unsuccessful attempts clear the way for what is to come after; but I have never observed, in my own experience, that any real good has followed from them. In the case related, it was tried for years, but without even retarding or alleviating the progress of the symptoms. However it may be explained, I have never seen any beneficial result until an instrument can be fairly passed into the bladder. I would, therefore, advise no one to linger tunnelling on the threshold of a stricture, but, with all expedition, by patient, steady, and gentle manipulation, strive to penetrate it, regarding that as the first indispensable step towards a cure."

ART. 104.—*On catheterism in cases of confirmed Stricture.* By Mr. HENRY THOMPSON, Surgeon to the St. Mary-le-bone Infirmary.

(*Lancet*, June 23, 1855.)

"There is a circumstance very necessary to be remembered by the operator in relation to catheterism in cases of confirmed stricture, which does not appear always to have received that marked attention which its importance demands. I have had several opportunities of exhibiting examples of the condition referred to at the Pathological and Medical Societies during the past year. It is well known that posterior to an old organic constriction of the urethra a considerable degree of dilatation often exists. The canal behind is gradually extended and opened out by the hydrostatic pressure occasioned in the habitual and powerful straining to pass urine which the patient is compelled to exert. Not only, however, does dilatation occur, but frequently also a fasciculated condition of the prostatic urethral walls, very much like that which we see in hypertrophied and fasciculated bladders, so that numerous fibrous bands intersecting each other appear prominent beneath the mucous lining, and interstices of corresponding depth and magnitude are seen between. It is not difficult, in examining these, to comprehend how that the difficulty of the case is by no means surmounted, when the point of the instrument has been insinuated, after much trouble, through the narrow channel of the stricture. We should not then at once push on our acquired success; for here indeed is a source of danger, greater in some cases than any that has before been encountered. Nothing is easier than to entangle the point of a small instrument in the meshes of these fibrous bands, and nothing is calculated to be more mischievous than any laceration in this posterior part of the canal. We cannot be too careful in the management of the instrument after the stricture has been surmounted, not only on account of the possibility of the existence of the difficulty described, but also because the delicate appreciation of an obstacle is far less easy after the catheter has passed through the stricture, and has become embraced by it, since it is in some degree difficult to recognize a slight degree of resistance which may offer itself beyond the point at which the grasp of the constriction interferes with freedom of motion on the part of the instrument.

"A preparation recently added to my collection was taken from a case, the particulars of which form an apt illustration of these remarks. It belonged to a patient whom I was requested to see when laboring under complete retention. Attempts had been made to relieve him, both in the hot bath and out, but without success. I found him almost comatose, and with great depression of the powers of life. He was seventy-three years of age, and had suffered from stricture for many years. The condition of retention had been discovered about twenty-four hours before, but it had probably existed to a greater or less extent for a much longer period than this. Passing a No. 8 catheter, I found the obstruction distinctly marked in the bulbous portion of the urethra. With tolerable ease a No. 1 was carried through it, and here I encountered the obstacle, which, from what I learned, was probably that which had previously presented the chief difficulty. The instrument was felt in the rectum with more than ordinary distinctness, suggesting that it might be beneath the prostate gland, and lying in a false passage. A degree of mobility, however, and the fact that the stricture was one of very long standing, suggested that the point of the instrument was involved in the meshes of a dilated prostatic urethra behind the organic constriction. Accordingly, with a little withdrawing and manœuvring of the point, I was enabled to carry it into the bladder, drawing off about thirty ounces of dark and ammoniacal urine. I then tied it in the usual way, with the bent tube attached. The patient dying in a day or two after, from a degree of exhaustion which his age and general infirmities did not permit him to overcome, I found, on careful examination of the specimen, that there was no false passage, but just the condition which has been alluded to. The atrophy, or thinning of the prostate gland from dilatation, especially at its inferior part, accounted for the ease with which the instrument could be felt by the finger in the rectum, and the recesses and dilated orifices seen there had, without doubt, occasioned the

difficulty in carrying the catheter into the bladder. It is in these cases, in which the urethra is dilated, thinned, and weakened behind the stricture, that the catastrophe of rupture and urinary extravasation is especially prone to happen when the distended bladder has not been relieved by surgical treatment."

ART. 105.—*On the advantages of Silver Catheters.* By Mr. HENRY THOMPSON, Surgeon to the St. Mary-le-bone Infirmary.

(*Lancet*, June 9, 1855.)

Mr. Thompson believes that there is no instrument which is half so efficient or useful, and none which causes so little pain to the patient, as a well-polished silver catheter. "I am aware," he says, "that in this matter very high authority may be quoted in favor of elastic or flexible instruments. In general terms, doubtless, every man will succeed best with that instrument to which he has been most accustomed, and we may not forget that the flexible instruments were much more in vogue at the period when the authorities referred to acquired their earliest practice, than at the present day, and that thus a practical predilection for them was originally attained, which never could be altogether lost. Nevertheless, what does Sir Benjamin Brodie advise in the treatment of cases of retention from stricture? In the first instance, the use of a gum catheter, and if this fails, a resort to the silver one. But if the latter be the most efficient instrument, surely there is no good reason for not applying it at the outset. If in any class of affections it is desirable to lose no time, to 'put our best foot forward'—to make every effort in order to succeed at once, it certainly must be in those which require catheterism, since failure to succeed at the first attempt almost invariably increases the difficulty of a second, on account of the additional irritation which must, to a greater or less extent, be set up. The general objection to the use of a solid instrument consists, I believe, in the fact, that it is possible to do greater mischief with it than with the flexible instrument; that unless properly used, its point may be run through the sides of the urethra, and false passages may be made more readily than with the elastic gum catheter, or wax bougie. A very good argument truly against trusting a man, wholly ignorant of the use of the catheter, with one which is inflexible and solid—a reason doubtless sufficient for recommending the use of the gum instrument to a patient whom you may desire to employ the catheter for himself; but certainly no reason at all for depriving the surgeon, whose proper function it is to understand its management, of the silver catheter. Granted that it is possible to do more mischief with a solid than with a flexible instrument, I have no hesitation in saying that the former is in an equal ratio as much more capable of effecting good, if rightly used—is as much superior to the latter in its capability of overcoming a difficulty, as the latter is guiltless of power to do much mischief. The case resolves itself into a solution of these questions:—Does the operator desire to control the point of the instrument he introduces into the urethra, in order to overcome some obstruction there? Does he desire to be cognizant of the exact course it is taking there? Can he derive from its point sensations, appreciable through his hand, which inform him as to the progress of the instrument, or the nature of the tissue it encounters, and which may guide him in directing and modifying the motions he communicates to it? If the answer is affirmative to each one of these inquiries—and I presume no one will venture to say it should be otherwise—why should we employ an instrument which bends and twists, so that shortly after its introduction into the urethra, it is impossible to know the curve which it possesses, the direction of its point, or how to obtain those delicate perceptions of position, of the condition of the urethral walls, of the nature of the obstruction, which, with the solid instrument, are so beautifully appreciable, and become so advantageous to the operator. If from any circumstance I feel myself so hopeless of success, that my chance of overcoming the difficulty by the exercise of design and tact in the management of the catheter is gone, I might then be induced to try a flexible instrument, in the faint hope that its point might penetrate, by happy chance, the opening which skill had failed to hit; as the lost rider, in a gloomy night and in a strange country, throws the rein upon his horse's neck, and trusts to fate."

(C) CONCERNING THE UPPER EXTREMITY.

ART. 106.—*Dislocation of the Humerus backwards into the infrapinnous Fossa.* By MAURICE COLLIS, Surgeon to the Meath Hospital.

(*Dublin Quarterly Medical Journal*, Aug. 1855.)

A case of this extremely rare dislocation occurred at the Meath Hospital, in October, 1851.

CASE.—The subject of this accident was an old woman, very thin, with weak flabby muscles. The accident occurred thus: as she was walking along the pathway, with a bundle under her arm, she slipped off and fell forwards on her shoulder; she immediately came up to the hospital, feeling that her shoulder was hurt.

Upon stripping the shoulder the very remarkable symptoms of dislocation backwards were at once readily perceived. In place of the natural rounded prominence in front, there was a deep depression or pit into which the finger could be pressed: there was flattening of the shoulder on the outer side, below the acromion, and a large rounded prominence was felt at the back of the scapula, below the spine. This prominence was subcutaneous, and was easily ascertained to be the head of the bone, upon rotation of the arm. The elbow projected forwards and a little out from the side; the axis of the limb ran from the prominence above mentioned downwards and forwards; the length of the limb, from the tip of the acromion to the point of the elbow, was not altered. The patient was either unable or unwilling to attempt motion of any kind, and when desired to do so she moved the scapula on the trunk. We were, however, able to rotate the arm freely, to approximate it to the side, and to bring it forward. We could not raise it or bring it in a backward direction without rotation of the scapula. In our manipulations we experienced no difficulty from the occurrence of tumefaction or effusion, owing to the recent nature of the accident, nor did the patient complain of much pain. The dislocation was readily reduced. Mr. George Porter made extension by raising the arm to a right angle with the body, and drawing it outwards and slightly forwards, at the same time rotating it. I fixed the scapula with the palms of my hands, and made pressure on the displaced head of the bone; with very slight effort the bone returned to its natural place, and the symptoms of dislocation disappeared. The patient recovered the use of her arm at once, and did not return to the hospital.

"All surgical authorities are agreed upon the extreme rarity of this form of dislocation,—not more than eight or ten being on record. Boyer attributes this rarity to the fact that muscular action has no part in bringing about this dislocation. According to him the accident occurs by a fall on the side with the arm extended and advanced; and it will require a very considerable force to be applied to the elbow before the bone can be thrust outwards or backwards; it is manifest, however, that even when the accident occurs in the manner described by Boyer, that the action of the muscles, which attach the scapula to the trunk, largely assist in producing the dislocation. By these muscles the scapula is fixed, while at the same moment the humerus is converted into a powerful lever of the first order. Its centre rests on the side of the chest, the violence is applied at the elbow, and it is only when this violence is sufficient to rupture the capsule, and overcome the action of the muscles about the capsule, that dislocation can occur. The muscles which fix the scapula assist in causing the accident, for if the glenoid cavity were not fixed by them, the violence applied to the elbow would cause it to follow the head of the bone in its movements, and render dislocation impossible. The possibility of dislocation by a direct blow on the front of the shoulder does not appear to have struck Boyer, nor do I well know how to account for its producing dislocation in the present instance, unless by supposing that the glenoid cavity was altered by age and rheumatic disease. It is well known, these causes are sufficient to flatten the cavity, and give it a greater breadth in the backward direction. In the *London Medical Gazette* for 1833 a somewhat parallel case will be found, in which an old woman, falling on the front of the joint, dislocated it backwards. From the feel of the joint, when

reduced, both Mr. Porter and I were of opinion that the dislocation would be easily reproduced; the patient, however, never returned to the hospital, and we are ignorant of her subsequent history. I have thought it right to put the case on record, as the accident is rare; but I regret that I am not able to throw more light upon what may be called the mechanism of its occurrence."

(D) CONCERNING THE LOWER EXTREMITY.

ART. 107.—*On exercise in Hip-Disease.* By Dr. E. S. COOPER.

(*Dublin Medical Press*, July 11, 1855; and *Trans. of the Illinois Med. Soc.* 1855.)

The following case is intended to show the beneficial results of exercise in cases of hip-disease, if the joint itself is kept motionless by some appropriate apparatus.

CASE.—Master John Fear, æt. 9, was attacked in the spring of 1852, with pain in the knee, which continued for some weeks, when it was ascertained that the seat of disease was in the hip, and his physician had him confined to bed, and kept in this position from the 1st of May to the 27th of June, when he was admitted into my institution. I found him in the following condition: much emaciation; pain in the hip and knee; the foot of the diseased side projected two inches beyond the other, when they were placed side by side. Pressure on the heel produced an immediate reference to pain in the hip-joint. Having already witnessed the benefits of early walking in white-swelling, the great relief from pain which exercise gives in these cases after the inflammatory symptoms have been principally subdued, and its invigorating influence upon the general health, I concluded that, inasmuch as keeping the joint quiet was the only object in confining patients to bed generally who have this disease, an apparatus might be devised which would secure the quietude of the diseased parts, and at the same time permit the balance of the body to be exercised, all which I was able to effect by a proper machine. From the period of its application, the patient was more comfortable, particularly during the night; in fact the change was very striking, so much so that from the most painful, sleepless nights, he passed to complete quietude during that period, interrupted by occasional paroxysms of pain, which were readily relieved by an opiate. With this apparatus, I could abduct the head of the thigh bone to the extent desired, and by thus securing the ulcerating articular surfaces from pressure upon each other, and keeping the thigh bone from motion, while with the leg held in a state of flexion, the patient could exercise on crutches without the least detriment to the diseased limb. The general health improved very rapidly, and the appetite became good, while the little fellow began to pass his time quite happily. About this period, however, his father removed him from town. I learned subsequently that he continued to improve after leaving me, and though I am unable to state whether he ever recovered entirely, I think no case occurring in my practice ever gave me more satisfaction at the time. Subsequently, I have treated several other cases with similar results, and though some circumstance in each case has prevented me from witnessing the course throughout, there were none in which the patient did not begin to improve upon the application of the abduction splint. With one on the third day, he was able to press the foot of the diseased side upon the ground in walking, a movement which he had been unable to make for months previously. This case was that of Jotham Lyons, of Fulton county, Illinois, aged fourteen years, who had been attacked about seven months when he was admitted into my institution. I shall not give a history of his case in detail; suffice it to say, that, though the symptoms progressed slowly, the disease had gradually advanced from the commencement, until after the application of the splints, since which he has been steadily improving up to the present period.

ART. 108.—*Successful case of amputation at the Hip-joint.*

By Mr. TATUM, Surgeon to St. George's Hospital.

(*Medical Times and Gazette*, Aug. 18, 1855.)

The case necessitating this operation was malignant disease of the femur, the particulars of which will be found below:

CASE.—A. N—, a youth, æt. 17, with light hair, blue eyes, and an extremely pale complexion, was admitted into St. George's Hospital, under my care, on the 26th of June, 1855, with a large tumor just above the left knee. The diseased mass occupied the whole circumference of the thigh; was most prominent on the inner side, and extended from the knee one-third up the limb, but the joint itself was quite healthy. The skin over the tumor was tense and shining, with numerous large veins ramifying below the surface. Fluctuation, as of fluid contained in a large cyst, existed over a great part of the tumor.

The history of the case was a brief one. It appeared that about last Christmas, he received a blow over the inner condyle, to which no importance was attached until the beginning of April, when feeling some uneasiness in the part, the patient examined it, and found a slight enlargement over the inner condyle, smaller than a pigeon's egg, and immovable. The tumor did not increase much at first, nor was it painful, but it soon began to grow rapidly, and was then accompanied by great pain, especially at night. The pain, from his description, seemed to have arisen more from the tension of the parts than from any intrinsic condition of the tumor.

On his admission, the patient appeared to be greatly exhausted, and very much wasted, from the great demands of the morbid growth on the frame for nutrition, and partly from the pain and want of sleep. The skin throughout was perfectly blanched; the pulse 120, not quite devoid of power; the tongue clean; and the appetite pretty good.

It being decided to remove the limb, the operation was performed on the 4th of July. The patient, having been placed on the table in a half-reclined posture, was supported by a person seated behind him, and the nates were brought well over the edge of the table. When the patient was fully under the influence of chloroform, the inguinal artery was taken charge of by Mr. Prescott Hewett, who simply compressed this vessel against the pubes, by means of his thumbs. The thigh being slightly bent, and abducted, a long, straight, amputating knife was introduced at the union of the upper and middle third of a line, drawn from the anterior superior spine of the ilium to the great trochanter; the knife was then carried obliquely inward and downward, immediately over the capsule of the joint, and brought out about two inches below the tuberosity of the ischium. Cutting my way out, I made a large anterior flap, which was at once firmly grasped, so as to prevent all possibility of hemorrhage, and drawn upwards. The anterior part of the capsular ligament being laid bare, was easily divided; the head of the bone was then partially dislocated by rotating the limb outwards, and extending it backwards; the ligamentum teres was at once cut through, and the dislocation of the thigh-bone completed. The knife was then carried through the joint, and over the trochanter, and the posterior flap was made. In doing this, I took care and managed so as to have this flap somewhat small and thin, well knowing, by experience, that a large posterior flap tends, by its weight, to drag the cut surfaces apart in the progress of healing. As I completed the posterior flap, dry sponges were stuffed into the wound by assistants, and thus all hemorrhage from the numerous divided vessels was at once stopped. Such being the case, the femoral artery, and the branches in the anterior flap were first tied, and afterwards those in the posterior flap. A great number of vessels in all were secured, every small branch being taken up to avert the possibility of secondary hemorrhage. The femoral vein also was last tied, as it continued to bleed freely. The edges of the flaps were then brought together, and retained in apposition by four or five sutures; and some strips of adhesive plaster were then applied, and the whole covered by some water dressing. Some faintness occurred during the operation, but this subsided shortly after the patient had been laid quite flat, and some brandy and water had been given. He was then removed into a spare room, and complete quiet was enjoined.

Immediately after the operation a longitudinal section was made through the soft structures on the front of the thigh, the incision being carried through the bone, and the soft structures behind it, when extensive malignant disease of the bone was observed. This disease was a combination of the medullary, hæmatoid, and osteoid cancers.

On the front of the thigh was a large cyst, containing about three pints of

dark, grumous blood, mixed with a thin, dark, and sanious fluid. The cyst was situated just external to the periosteum, and had displaced the extensor muscles from the front of the thigh. A second cyst, containing about half a pint of similar fluid, was found at the back part and outer side of the shaft of the bone.

The upper third of the thigh-bone, and its periosteum, were healthy, but the lower two thirds were extensively diseased. The superficial lamellæ of the bone were separated, and a soft medullary deposit, mixed with granules, and spiculæ of bone, was found occupying the interspaces between them. Towards the lower part of the bone, the separation had taken place to so great an extent, from the amount of deposit, that the superficial layers of bone were quite destroyed, and a large, solid, partly bony, and partly fibrous, mass projected from the back part of the shaft of the bone. The attached portion of the new bone was moderately firm, and arranged in the form of laminæ and plates, in the interspaces between which the fibrous element of the growth was deposited. The surface of this growth was covered with a mass of soft, brain-like, medullary deposit. The remaining part of the compact wall of the bone was much thickened, and towards the lower part of the bone to so great an extent, that the medullary canal was obliterated by a dense osseous tissue, of ivory-like hardness and density.

A careful microscopic examination was made of the several parts of this disease, the result of which clearly showed it to be formed of medullary cancer deposited between the lamellæ of the bone, and between the bone and the periosteum; the formation of hæmatoid cysts in various parts, and the development and growth of osteoid cancer between the lamellæ and on the surface of the femur, corresponding to the lower part of the bone.

After the operation he suffered but little pain; he slept some hours on that night; and took beef-tea on the following day. In the evening of the 6th, as there was pain in the stump, and fear of a restless night, a slight morphia draught was given, and was repeated during the night; this gave him several hours' good sleep. The tongue was clean; but the pulse was 120, and languid. A roast slice of meat was ordered, and some porter. On the 8th, the bowels not having acted since the operation, one drachm of castor-oil was given, which acted several times during the day. On the 9th, meat was given twice a-day, and, in addition to the porter, six ounces of port wine daily. The wound was dressed, for the first time, on the 5th day after the operation, and the sutures removed, and it was found that a large portion of the wound had healed by first intention; there was, however, a good deal of suppuration, which escaped through the openings where the ligatures had been brought out. This suppuration diminished as the ligatures came away; and from the 16th day, when the ligatures from the femoral vessels had separated, the discharge greatly subsided. On the 1st of August he left the hospital well, just four weeks after the operation. Twice during the healing of the wound, the granulations assumed a pale, flabby appearance, which a little gray powder at night, and a rhubarb draught in the morning, completely corrected. The morphia draught, though reduced in strength, was continued during the time that he was in the hospital; he slept uniformly well under its influence; his tongue continued throughout clean, and he took his food with good appetite.

ART. 109.—*Fracture of the neck of the Femur, cured without any kind of apparatus.*
By M. RIBES.

(*Gaz. Hebdom. de Méd. et Chir.* May 11, 1855.)

The case is given very briefly. A woman, æt. 63, fell and fractured her left cervix femoris. When M. Ribes first saw her she had lain in bed without any kind of surgical assistance for two whole months; and, at the time, the limb was turned outwards, and somewhat shortened and flattened over the joint. Still she had recovered so as to be able to get out of bed occasionally, and move about the room. The advice which M. Ribes gave was simply to move about as little as she could, to use crutches, and when in bed to put a high pillow under her knee, so as to keep the leg half flexed upon the thigh. This she did, and shortly (dates are not given) she was able to move about briskly with the aid of a simple stick.

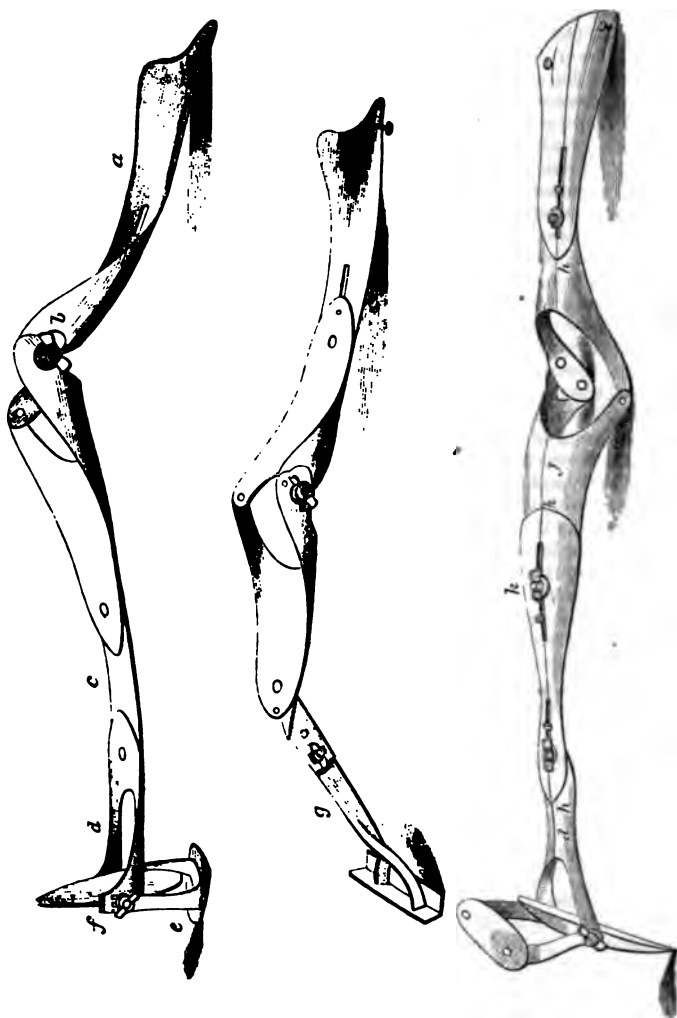
In commenting upon this case, M. Ribes says he does not think he should have acted differently if he had been called in at the first, because he is by no means satisfied that a better result would have followed the use of any kind of surgical apparatus. He thinks the inconveniences are great, and the benefits doubtful, in almost all the cases in which the parts are kept upon the stretch by apparatus; and in this opinion he is borne out by Sabatier, Dupuytren, and Astley Cooper.

ART. 110.—*A new apparatus for fracture of the Thigh.*

By Mr. WINCHESTER, Surgeon to the Westbourne Dispensary.

(*Medical Times and Gazette*, Sept. 1, 1855.)

This is Liston's instrument, so modified as to secure the carrying out of that "principle of adjustment" which Mr. Chichester considers to be of such essential



moment in the treatment of fracture. We give the description of the apparatus,

and the mode of applying it, as well as a portion of a letter from Mr. de Morgan, Surgeon to the Middlesex Hospital, in which he speaks of its practical advantages.

The instrument consists of five pieces: (a) thigh, (b) knee, (c) leg, (d) foot-piece, (e) swing, (f) rack for regulating the angle of the footboard, (g) is the support for stump-rest, (hhh) points or indices, (fff) central line, (k) screws for regulating length and adjustment.

Its application is as follows:—Apply it to the sound limb, and having fixed the knee and footpieces at the desired angle, regulate the length and adjust to the natural curve by giving the necessary lateral movements, so that the limb may rest in its entire length exactly in the centre of the splint. Having fixed it in this position by means of the screws underneath, remove it from the limb, and observing the indices, mark their deviation from the central line, and, by slightly loosening the screws, turn them to similar points on the opposite side, so that the natural curve of the injured limb may be thereby obtained: or, if preferred, as more in accordance with the ordinary method of procedure, the length may be regulated by admeasurement, and such lateral motion given as is necessary to preserve perfect coaptation.

Mr. de Morgan writes to Mr. Winchester as follows:

"I have used your double inclined adjustable splint in five cases of fracture in the Middlesex Hospital,—four of fracture of the tibiae, and one of fracture of the lower end of the femur, extending into the joint. The fractures of the tibiae were all oblique, and in three there was a strong tendency to displacement, until they were placed on your splint, after which they gave no further trouble. The last case in which it was used by me in the hospital will serve as an illustration of the advantage of attending to the principle carried out by you in your mode of adjusting your apparatus. It was that of a soldier in the Light Dragoons, who had fractured the tibia obliquely at its lower third. The limb had been placed in good position on a Macintyre's splint; but when I saw the patient, two hours afterwards, the bone was displaced, the lower portion being drawn upwards and inwards. It seemed a good case for testing your splint, and on adjusting it to the sound limb, we found that a considerable inclination of the lower joint of the splint inwards was necessary, in order to fit it properly to the natural curve of the leg: an equal inclination was then given in the opposite direction, so as to fit it for adjustment to the fractured limb, and on now placing the leg in it, and putting the fractured ends of the bone in apposition, they remained in place; nor was it found necessary to interfere further until union had taken place—at the end of four weeks—when the limb was found to be quite strong, and without the slightest irregularity in form or length; yet during the time he was in the splint, the man changed his posture easily and frequently. This he was enabled to do in consequence of your contrivance of a movable rest at the lower end of the splint, which seems to me to answer even better than the suspending apparatus usually employed. This is the history of the other cases in which I have used the splint, and in all the patients have found great comfort from its application. In one case, I was obliged to remove it from a patient who had been using it for some time, and when there was no longer any risk of displacement of the bones, in order to apply it in a recent case. The patient from whom it had been removed, and whose limb was placed on an ordinary Macintyre's splint, said that he had found very far greater ease in using your apparatus. It cannot, I think, admit of doubt that the adjustment of the splint to the natural curves of the bone is greatly calculated to insure a good result. This is easily and effectually done with your splints, but can be effected only with difficulty, if at all, with any other with which I am acquainted; indeed I am not aware that the attempt had been made, or the principle recognized, before your invention of the adjusting long splint. The movable rest is hardly less useful, as it allows the patient to move and shift his position without risk of displacement of the fractured bones. I have not found anything to object to, nor can I suggest any improvement in your splint."

ART. 111.—*On amputation of the Thigh in civil and military practice.* By Dr. RICHARD MCSHERRY.

(*American Journal of Medical Science*, Jan. 1855.)

The great fatality which attends upon amputation of the thigh after gun-shot wounds is evidenced by the fact, that, during the campaign in Mexico, under General Scott, there were no recoveries, so far as Dr. McSherry could learn, after the operation. This mortality is not peculiar to America, as M. Ribes examined four thousand invalid soldiers, among all of whom he did not find one single instance of injury of the femur by shot, nor one who had undergone amputation of the thigh. Malgaigne was equally unfortunate with all his cases during the Polish campaign. In civil life the case is widely different. The statistical tables, published by Dr. Norris, state that during a period of ten years, of sixteen amputations of the thigh, performed in the Pennsylvania Hospital, fourteen recovered, and but two died. The two fatal cases were primary amputations, after fracture of the thigh and compound and comminuted fracture of the leg respectively. Of the fourteen successful cases, seven were fractures (one ununited fracture of thigh), one tumor on the knee, and six caries of knee-joint. These results are favorable, Dr. McSherry thinks, to secondary amputations.

In the Parisian Hospitals, there were, in ten years, forty-four amputations of the thigh. Of these, thirty-four died, and ten recovered. All of these, however, were amputations after *traumatic* lesions. A comparison of these results shows that patients who undergo great operations, in full robust health, are more liable to perish than those who are subjected to them for chronic disease. There is abundant proof also, that delay is advantageous. Dupuytren, in 1830, treated thirteen cases of fracture of the thigh *without* amputation; of these six recovered, and eight died. Malgaigne reports five cases treated by himself *without* amputation, of whom two recovered, and three died. These results, compared with those in the same hospitals after amputation, show that the chances of life were greatest where the operation was not only deferred, but foregone altogether. Dr. McSherry argues from these facts that the rule, which requires immediate amputation after a gun-shot fracture of the femur, is a bad rule, inasmuch as it sacrifices the limb without adding appreciably to the chances of ultimate recovery. When there is complete disorganization of the limb from the shot, the case is, of course, different. The *exception*, however, should not be made the rule.

ART. 112.—*On internal derangement of the Knee-joint.* By Mr. SYME.

(*Lancet*, May 5, 1855.)

The following remarks upon a rare affection, to which attention has been recently called by others (Abstract, Number XXI), occur in a clinical lecture delivered at the Royal Infirmary at Edinburgh:

"Many years ago, gentlemen, in reading the observations of Mr. Hey, of Leeds, I was much struck with some cases mentioned by him under the title 'Internal Derangement of the Knee-joint,' in which the articulation was affected with some obscure injury, producing more or less lameness, and interfering with the perfect motion of the limb, and remedied by acute flexion, followed by sudden extension of the leg. From that time I had been on the lookout for such cases, without ever meeting with one, and though I never doubted Mr. Hey's accuracy, I could not but wonder that that of which he had seen several examples should never have occurred in my practice. The other day, however, a case of this kind came under my care, and although you did not see it, I think it would be wrong if I omitted to allude to it; but before speaking of it, I will read you the account given by Mr. Hey of one of his cases.

"In 1784, the Honorable Miss Harriet Ingram, as she was playing with a child, and making a considerable exertion, and stretching herself forward, and stooping to take hold of the child while she rested upon one leg, brought on an immediate lameness in the knee-joint of that leg on which she stood. The disorder was considered as a simple sprain, and a plaster was applied round the

joint. As the lameness did not diminish in the course of five or six days, I was desired to visit her. Upon comparing the knees, I could perceive no difference, except that when the knees were placed in a state of complete extension, the ligament of the patella of the injured joint seemed to be rather more relaxed than in that joint which had received no injury. When I moved the affected knee by a gentle flexion and extension, my patient complained of no pain, yet she could not perfectly extend the leg in walking, nor bend it in raising the foot from the floor, but moved as if the joint had been stiff, limping very much, and walking with pain. I thought it probable that the sudden exertion might in some degree have altered the situation of the cross ligaments, or otherwise have displaced the condyles of the os femoris with respect to the semilunar cartilages, so that the condyles might meet with some resistance when the flexor or extensor muscles were put into action, and thereby the free motion of the joint might be hindered when the incumbent weight of the body pressed the thigh-bone closely against the tibia, though this derangement was not so great as to prevent the joint, when relaxed, from being moved with ease. To remedy this derangement, I placed my patient upon an elevated seat, which had nothing underneath it which could prevent the leg from being pushed backward towards the posterior part of the thigh. I then extended the joint by the assistance of one hand placed just above the knee, while with the other hand I grasped the leg. During the continuance of the extension, I suddenly moved the leg backwards, that it might make as acute an angle with the thigh as possible. This operation I repeated once, and then desired the young lady to try how she could walk. Whatever may be thought of my theory, my practice proved successful, for she was immediately able to walk without lameness, and on the third day after this reduction she danced at a private ball, without inconvenience, or receiving any injury from the exercise.*

"The case to which I wish to direct your attention was that of a young man, about thirty years of age, who came from the country to consult me on account of stiffness and pain in the right knee, of four or five days' standing. He had been for some years liable to attacks of this kind, but they had generally passed off quickly. His case differed from that of the young lady mentioned by Mr. Hey, inasmuch as it was impossible to extend the limb completely, even by external force, but, as in Mr. Hey's case, there was nothing to be felt wrong about the joint, except a loose cartilage in the pouch above the patella, freely movable, and evidently having nothing to do with maintaining the derangement of the knee. As movement of the joint to any considerable extent caused acute pain, I placed the patient under the influence of chloroform, and following Mr. Hey's principle, bent the limb to the full extent, and then attempted to extend it, but at first did not succeed in doing so completely; but after repeating the process several times, and shaking the limb in every direction, while the muscles were completely relaxed, I felt something give way in the joint, and then immediately found myself able to extend the limb completely, and the patient was from that time free from lameness. Mr. Hey speaks of some displacement of the crucial ligaments or semilunar cartilages as the probable cause of the lameness in these cases; the latter appears to me the more likely explanation; but, as Mr. Hey says, whatever may be thought of the theory, the practice proved successful."

ART. 113.—Excision of the Knee-joint. By (1) Mr. PEMBERTON, Surgeon to the General Hospital at Birmingham; and (2) Mr. HENRY SMITH, Surgeon to the Westminster General Dispensary.

1. (*Associated Medical Journal*, May 18, 1855.)

2. (*Medical Times and Gazette*, May 26, 1855.)

Both these cases were successful, and the recovery retarded by no accident. Mr. Pemberton's case also presents an additional feature of interest, in that the mode of operating was that adopted by Mälder of Gröningen—a mode not before carried out in this country. This mode is to cut through the bones from before backwards by the careful application of the saw, without disturbing the soft parts by the previous introduction of a spatula.

* Vide Hey's observations on Surgery, 1810, p. 886.

1. *Mr. Pemberton's Case.*—Edwin Fowl, æt. 12, pale, and suffering from strumous disease of the left knee for fourteen months. The operation was performed in the General Hospital, at Birmingham, on the 8th February, 1854.

"An incision was carried from a little above the outer to a little above the inner condyle, across the front of the joint, below the patella, dividing its ligament of insertion down to the spine of the tibia. The flap thus formed was turned back; and the cavity of the joint was fairly exposed. The disorganized soft parts having been cleared away from over the femur, it was sawn through above the condyles, without the aid of a spatula, or the introduction of a knife. The same process was next applied to the head of the tibia; and the articular extremities were then removed in their connected state, by a cautious dissection of the soft parts beneath, commencing from above downwards. The hemorrhage was inconsiderable; no ligature was required. The amount of bone removed measured rather more than three inches and a half. About two inches and a half belonged to the femur, and about an inch to the tibia. The patella was left, its under surface being scraped. The head of the fibula was not interfered with. The operation being finished, the leg was readily brought into a line with the thigh. The flap containing the patella was simply laid in as accurate a state of apposition as possible, over the parts beneath, without the aid of sutures, and was covered with water dressing. The entire limb was then adjusted on a straight splint, reaching from the buttock to the ankle, furnished with a foot support, and with side pieces to the thigh and leg; the knee being left perfectly free on the sides and above, for the application and renewal of dressings.

"*Examination of the diseased parts.*—The synovial membrane was everywhere affected by disease. It presented a pulpy, thickened condition, and was of a brownish tint, and covered in places by bloody discolorations. The cartilage covering the tibial surface of the outer condyle was destroyed, as was also the corresponding surface of the semilunar cartilage of the tibia. The entire thickness of cartilage on the inner condyle and tibia was not altogether destroyed, but was in process of ulceration. The extremity of the femur above the condyles was blackened, and denuded of periosteum. The bone was soft and carious. Fresh osseous material had been thrown out behind the condyle and on the head of the tibia. This medullary canal of the bone did not present an unhealthy appearance.

"No shock followed the operation; and but a single restless night marked the presence of any constitutional disturbance. The warmth of the limb, below the seat of operation, never varied. The patient had scarcely any pain, and could in the course of a fortnight exercise complete command over the muscles of the foot and leg.

"Three months afterwards, the following note was made:

"The healing of the wound had been retarded by the thickened character of the integuments. The parts in the situation of the joint were becoming firmer and more consolidated. The boy possessed perfect control over the movements of the foot, and turned it, with the entire limb, either inwards or outwards. The splint was discontinued, and the wound was firmly strapped and rolled.

"Four months after the operation, the wound remained open slightly at the sides. A gutta-percha splint was applied behind the joint; and the boy was directed to be out of doors on crutches. An accurate measurement was made of the two limbs, when it was found that the difference between them exactly corresponded to the amount of bone removed—namely, three inches and a half.

"The patient remained in the hospital until October; more for the purpose of observation than from any necessity. When discharged, eight months subsequently to the operation, the wound had entirely healed. One of the sinuses, existing previously to the operation, over the patella, still discharged. He could walk with the aid of a stick and a high-heeled shoe; the knee being supported by a leather case.

"I saw the boy so recently as the 23d of last month (April). The limb was quite straight. The wound was sound. The union appeared to be ligamentous. He could walk about anywhere with his leather case and stick."

2. *Mr. Smith's Case.*—John H—, æt. 7, slim, pale, and suffering from strumous disease of the knee.

"On Wednesday, October the 18th, the patient was placed under the influence of chloroform by Dr. Snow, and the operation was performed by me in the following way:—An incision was carried from the outer condyle of the femur along the side of the joint, in front of the patella, and from thence round to the inner condyle; this incision included the ligament of the patella, which structure, with the patella itself, was dissected up to the large semilunar flaps thus formed. The soft tissues were then very carefully separated from the circumference of the lower part of the femur, the lateral and crucial ligaments were cut through, and the saw being applied the condyles were removed. Great care was taken to limit the movements of the saw, as the posterior border of the bone was being reached. The tissues around the head of the tibia were next separated, and about a quarter of an inch of this bone was removed, when an abscess of considerable size was seen in its interior, the cavity extending below the seat of section; it therefore became necessary to remove about half an inch more bone, by which measure the cut surfaces were brought into apposition, and the limb drawn into a straight position. As the inner surface of the patella was diseased, this bone was also removed.

"There was not any necessity to tie a vessel; the flap was fastened by several sutures; wet lint, and a bandage from below upwards was applied, and the limb was properly secured in a box made especially for the purpose, consisting of a support with two lateral flaps and a footboard, all of which might be lowered at pleasure without the leg being disturbed.

"On examination of the parts removed there was found to be even greater disease than I expected. The cartilages on the condyles of the femur were ulcerated to a great extent, and in the intercondyloid space was a piece of bone about the size of a small nut, which was in a state of necrosis, and nearly detached from the sound bone. The cartilage was off from the head of the tibia, and the anterior of this portion of bone was hollowed out by a considerable cavity. The inner surface of the patella was deprived of its cartilaginous covering partially, and the synovial membrane was in a state of pulpy degeneration.

"14th.—The progress of the case has been perfectly satisfactory up to this point, and to-day the patient has left his bed in greatly improved health; the leg is increasing in size, and the union at the joint is becoming firm; there are some superficial sores in the seat of the sutures, and the sinus in front of the head of the tibia keeps discharging.

"30th.—Two days after the last report, I removed the limb from the box altogether, and, having found it firm and straight, applied a gutta-percha splint, and ordered the boy to move about on crutches; this he does every day about the house. An abscess had formed over the front of the joint, and was opened. The boy has been taking quinine; the sores before mentioned are still open. He can plant the toes of the weak limb firmly upon the ground while standing upright.

"January 17th.—This boy has been allowed to go out into the streets, and has much improved in general health, but the movement of the limb has been prejudicial, and has caused the sore in front of the tibia to spread and put on a sloughy appearance, and an abscess has formed again in the ham. I have, therefore, desired him to keep quiet, and have opened the abscess.

"February 2d.—In consequence of the severe frost, this little boy has been compelled to keep in-doors; but he is going on improving in health, and the sores have healed considerably. The limb is firm at the cicatrix.

"26th.—The counter-openings which were made in the ham are, I find, connected with the opening in front of the tibia, and there is a slight discharge from each of the three places. A probe passed through the one, readily passes out of the other orifice. I therefore deemed it most prudent to lay the sinuses open, and accordingly did so, to their full extent. On this being done, a considerable cavity, like that of an old abscess, was exposed; but it was superficial, and did not communicate with any diseased bone. The patient was ordered to lie up until this wound, which was of considerable extent, should begin to granulate. The limb is very firm, and the circumference is very much increased in size;


he can move it about in all directions; and he has such mobility of the hip, that he can throw his straightened leg behind his neck while seated in a chair. He has been living well, and occasionally taking cod-liver oil.

"April 15th.—For the last month, this patient has been walking about the streets every day. After having been furnished with a boot having a sole two inches higher than the other, and by means of a crutch and stick, his powers of progression are very free. He plants the limb, which is very firm, well down upon the ground, and with the assistance of a stick alone, he can walk with the utmost facility; but when he goes out for any distance, I have desired that he should use his crutch as well, as a mere precautionary measure, especially as the boy, being proud of his leg, is very fond of showing his agility, by the performance of the most eccentric movements, which are more calculated to amuse others than to enhance the utility of his limb. The large sore, which had resulted from the opening up of the sinuses in the ham, is healing, and the cicatrix of the original wound is firm and healthy. On very careful admeasurement of the two limbs, I find that the limb operated on is two inches and one quarter shorter than the other. It is straight, and not bowed out. On using some force above and below the site of operation, a little amount of movement, before backwards, can be produced, but in the latter direction this is hardly detectable. In all probability the junction between the bones is partly fibrous, partly osseous. Whatever be its nature, the limb is a remarkably useful one to the boy.

ART. 114.—*On the treatment of Onychia.* By Mr. HUMPHREY.

(*Philadelphia Medical Examiner*, Aug. 1855.)

The plan here proposed is very simple. It is nothing more than a piece of silver, rolled out sufficiently thin to admit of being bent to the required shape, yet sufficiently firm to bear moderate pressure. This should be nearly the length of the nail, from a quarter to half an inch wide, and bent into somewhat

of an S shape, or rather thus, . The lower end (b) is, with the aid of a pair of forceps, to be carried down between the overhanging ulcerated skin and the nail, and hooked under the rough edge of the latter. The upper end (a) is then carried outwards and secured in that position by a strip of plaster, and a bandage round the toe. By this means, the inverted edge of the nail and the skin are effectually kept from one another, and pressed in opposite directions.

"The nail is a little elevated, and the 'fungous growth' very soon shrinks under the pressure of the metal, and assumes a healing aspect. Often, when the silver is well adjusted, the patient is able to walk about with comparative ease immediately afterwards. I do not interfere with it for several days, when a marked improvement is usually found to have taken place. The silver is readjusted with greater ease, and allowed to remain a longer time. Gradually the ulcer heals, and the nail grows up in more natural shape and appearance. It is well, however, to continue the use of the silver for some time; and, after the sore has quite healed, it is well to insert a piece of lint, or a small flat piece of silver, under the edge of the nail, to prevent the tender cicatrix being fretted by it, and to keep down the skin. The patient should be directed to avoid tight shoes, and not to cut the corner of the nail low down. In some bad cases, it has been necessary to keep the patient quiet, or in bed, for a short time; and, in a few, to prepare the way for the silver by the introduction of a piece of lint, secured by a strip of plaster."

PART III.

MIDWIFERY AND DISEASES OF WOMEN
AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 115.—*The true mechanical relations of the Sacrum.* By Dr. J. MATTHEWS DUNCAN.

(*Edinburgh Medical Journal*, Aug. and Sept. 1855.)

DR. DUNCAN'S purpose in this paper is to show that the sacrum cannot properly be compared to a wedge or to the keystone of an arch; and his arguments, we think, are very conclusive. In Dr. Duncan's opinion, "the sacrum is to be regarded as a strong transverse beam curved on its anterior surface, and having its two ends, being the two articular surfaces, in contact with the corresponding parts of the iliac bones. It is so formed and placed between the two iliac bones, that, under the weight of the body or any vertical pressure, it cannot act as a whole like a wedge. But, as already pointed out, there are certain limited parts of the auricular surfaces of the sacrum so arranged as really to have a wedge-like action. These are so limited, however, as not to be of nearly paramount importance, but act as what are called 'bites' in engineering.

"The whole weight of all the upper parts of the body is transmitted through the vertebral column to the sacrum. How then is the sacrum retained *in situ*? Above and behind the articular surfaces are attached the posterior sacro-iliac ligaments which unite these parts to the corresponding rugosities on what may be called the posterior iliac tuberosities. From the former to the latter parts, the fibres of this, which is the strongest ligament in the body, run obliquely upwards and outwards. The sacrum has nothing to prevent its being depressed under the weight of the body, but these ligaments, to which the weight is all transmitted, and again through them to the posterior iliac tuberosities. The whole weight of the body then on the sacral beam is suspended by the sacro-iliac ligaments from the posterior iliac tuberosities, which, projecting backwards and inwards, overhang the sacrum to some extent.

"Once transmitted to the posterior iliac tuberosities, the weight is by them carried to the heads of the femurs through the iliac or cotylo-sacral beams which lie between them. The iliac or cotylo-sacral beam then extends from the posterior iliac tuberosities to the acetabula. This beam is pressed against the sacrum, as against a fulcrum, by forces applied at both its extremities. At the upper extremity, the force is one dragging in a direction corresponding to that of the posterior sacro-iliac ligaments, more or less in a line towards the centre of the pelvic circle. The force at the lower extremity is the reacting force of the weight of the body pushing in a direction upwards and inwards, also towards the centre of the pelvic circle. Both of these forces press the beam upon the fulcrum or auricular surface of sacrum, which, it is of importance to observe, is not in the centre of the beam, but nearer its upper than its lower end. The articular surface is, in mere distance, but little nearer the upper than the lower extremity of the beam, but mechanically viewed, is much nearer; for while the force applied to the lower end of the beam is applied to its extremity only, that applied to the upper is applied over its whole surface above and behind the auricular portion, and therefore the length of this arm of the beam is counted,

in the mechanical problem before us, only to the centre of the parts to which the force is applied."

ART. 116.—*On the condition of the neck of the Uterus during pregnancy.* By M. CAZEAU.

(*L'Union Médicale*, April 21, 1855; and *Edin. Monthly Jour.* June, 1855.)

Such is the title of a memoir read by M. Cazeau before the Société de Chirurgie, and upon which M. Laborie has drawn up a report, with an interest and labor seldom bestowed upon this task, in the learned societies of the continent.

The neck of the uterus, in the pregnant female, has often been subjected to examination, as far as that can be made by touch alone; but it is only of recent date that another method of investigation, in this respect, has been afforded, in the employment of the speculum vaginæ, and it is the results obtained from researches by means of this instrument, that M. Cazeau describes. According to these observations, he states that, in primiparæ as well as in multiparæ, the vaginal portion of the neck of the uterus is of a dark-red color (*lié-de-vin*), and in primiparæ, its whole surface presents a smooth appearance. The os uteri, of which the lips are very soft, is in general more or less rounded, and of a larger size than in the unimpregnated condition. The free portion of the neck in a very few cases exhibits ulcerations, and more frequently granulations of a cherry-red color, and bleeding easily. Among the multiparæ, the neck is larger; the opening is divided into different portions; it is large, and the interior of it admits of being examined. The walls of this part of the organ are irregular, and present a number of fungous elevations which bleed readily, in the hollows between which are occasionally observed ulcerations of a linear shape, and more or less deep. M. Cazeau regards these ulcerations as of little importance, and disapproves of any treatment for their removal.

MM. Boys de Loury, Costillies, and Coffin, consider the ulcerations of the first period of pregnancy, as having a marked influence in the production of abortions.

Admitting so far this opinion, M. Cazeau rejects it in its application to the ulcerations of the last months of utero-gestation; and, according to this view, he proposes that no treatment should be adopted in the latter cases. Thus, with the exception of specific ulcers, M. Cazeau considers that the others should not be interfered with, and, unless an excessive tendency to spread were manifested, no local means of treatment should be employed.

ART. 117.—*Influence of starvation on the part of the mother upon the size of the child.* By M. P. DUBOIS.

(*Rév. Méd. Chir. de Paris*, June, 1855.)

A case recently occurring in the practice of M. Dubois supports the idea that it may be possible to put some check upon the growth of the fœtus in cases of pelvic contraction, by stinting the quantity of food supplied to the mother.

The patient in question became pregnant about three months after marriage, and from the first she suffered from excruciating pains in the stomach. These pains began immediately after taking food, and never ceased until the stomach became empty. Nothing but abstinence afforded any relief, and the result was that she took scarcely any food at all during the whole period of pregnancy.

Delivery took place about a fortnight before the full period, and the child was extremely small (hardly 1500 grammes). The placenta, also, was very small, but in other respects it was quite natural.

In short, the whole appearance of the child and placenta suggested the idea that the unusual smallness was nothing more than the natural consequence of the peculiar starvation of the mother; and this opinion M. Dubois supports by referring to the case of a woman who had given birth to a large child with extreme difficulty, and who, being again pregnant, involuntarily placed herself upon low diet in the hope of having a smaller child by so doing. We are left to conclude that the woman was not disappointed in her expectations.

The subject is well deserving of attention.

ART. 118.—*The effect of the death of the Fetus upon the duration of pregnancy.* By Dr. JOHNS.

(*Dublin Quarterly Journal of Medicine*, Aug. 1855.)

Dr. Johns relates the case of a fœtus which died about the sixth month, and was retained to the natural term of pregnancy, and then (among other things) he directs attention to the evil consequences which might arise from ignorantly supposing that delivery had taken place when the fœtus died.

CASE.—Mrs. M., æt. 40, mother of four living and two premature still-born children, when pregnant for the seventh time, engaged me to attend her in her then approaching confinement, which she stated would occur on the 11th of April, 1853, as she had menstruated on the 11th of July, 1852.

On the 12th of February this lady sent for me, in consequence of uterine hemorrhage, which had set in on the previous evening, and was then continuing, but unaccompanied by pain.

I made a vaginal examination, and satisfied myself that she was not in labor. I also examined the abdomen most carefully, and then mentioned to her my conviction that she was not so long pregnant as she believed herself to be, for that the womb had only attained the size and position in the abdomen usual at six months of pregnancy; to which she replied, that she had quickened on the 10th of November, when four months pregnant, and had continued to feel her child up to the end of the sixth month, but that since that period she was not sensible of its vitality. At this visit the pulsations of the fœtal heart were not discoverable, but the placental soufflet was indistinctly audible, abrupt, and weak. The hemorrhage ceased, rest being the only means employed.

On the 11th of the following month (March) I was again summoned to Mrs. M., the hemorrhage having returned on that morning, but without pain, as on the former occasion. She being very hysterical, I ordered an anodyne draught, which, together with rest in the recumbent posture, had the desired effect of calming her, and arresting the discharge. I embraced the opportunity of this visit to test the accuracy of my former prognosis, when I was much surprised at discovering that the uterus had not increased in size since my visit of the preceding month, its fundus then having reached as far as the umbilicus, which was protruded. My patient, however, insisted that she had become much larger, which fact, doubtless was attributable to flatulency, which obtained to a great extent, and from which she suffered much. I then made a very careful stethoscopic examination of the whole abdomen, but I could not discover either the fœtal pulsation or the bruit placentaire. Borborygmi were, however, very audible, but not in positions likely to mask the other sounds.

The occasion of my next visit to this lady was when labor had set in, which occurred at nine o'clock, P.M., of the 11th of April, 1853. The uterus then held the same position in the abdomen as on my two former visits. Once more a stethoscopic investigation was instituted, but not with happier results than before. Labor progressed slowly till half-past four o'clock, A.M., of the 12th of April, when, with one violent pain, she brought forth the placenta with the membranes unruptured, containing about a pint of whitish fluid of the consistence and appearance of skimmed milk, in which was floating a dead, dried up, and withered fœtus, apparently of about six months, presenting very much the aspect of having been for some time macerated in spirits of wine. The placenta and membranes were healthy, and neither they, the child, nor the liquor amnii exhaled the least unpleasant odor. There was not any hemorrhage or other bad symptom after delivery, and she recovered very quickly. Mrs. M. mentioned to me, in conversation, that she had enjoyed much better health than usual whilst carrying this child, and that she had gained flesh.

"What effect, then," adds Dr. Johns, "has the death of the child upon the duration of pregnancy? This, at a superficial view, may appear of little moment; but, on deeper reflection, it shall become self-evident that a false prognosis in such a case as the one before us may induce very fearful consequences to the physician, or may embitter the happiness of families, by causing

wounds that never may be healed, separations never to be reunited. In illustration, the following case is by no means improbable.

"Captain B., R. N., marries and leaves his youthful bride to join his ship three weeks after his marriage, she then being pregnant, but without his or her own knowledge. Gestation progresses favorably for six months, at the end of which period the child ceases to live, but is retained in the womb till the full period of natural pregnancy; this viscus not having enlarged after the child's death, the mother never felt her child, nor was she at all conscious of her condition, being necessarily inexperienced in such matters, besides being, as she supposed, unwell each month (which discharge may have depended upon ulceration of the os uteri upon nature's attempts to throw off the dead fœtus, which had become a foreign body, or upon many other causes too numerous here to relate). However, at the end of the ninth month her husband returns, expecting to find a young and spotless wife, to be alike participator of his joys and griefs, when, alas! to his horror and dismay, he finds that she has just given birth to a six months' child, but dead, and in other respects like Mrs. M.'s baby. Is it not natural that he at once accuses his lady of infidelity? and what protestations of hers as to her innocence, be they ever so solemn, shall convince him that she still is not guilty? This is the juncture at which the physician may be the balm or the wormwood; therefore upon him rests the responsibility of deciding the question. But if he be ignorant of the possibility of a dead child being carried in utero for such a period, he condemns the lady, and I need hardly say, the consequence is too apparent. If, however, subsequently, the ill-judged, ill-treated, and unfortunate lady's innocence be proved, what shall become of the reputation of that physician who unhesitatingly pronounced her guilty? But if no such happy result should ensue to the lady, what shall and ought to be the feelings of that man, when, in after years, he shall discover his ignorance, and think upon the mischief it had entailed upon society?"

ART. 119.—*Blighted fœtus at the fifth month, retained and expelled with a living fœtus at full term.* By Dr. WILLIAM M. BELT.

(*American Quart. Jour. of Med. Science*, April, 1855.)

This case occurs as an original communication. It is a pity that more is not said about it, but we give all we find.

"I was called," says Dr. Belt, "on the 23d of January, 1852, to see a girl in the employment of Mr. Young, of Independence, Mo., who was supposed to be in danger of abortion. The waters had escaped, according to her statement; and there was slight hemorrhage with strong uterine pains. I kept her in a recumbent position, and gave a mild cathartic. In five or six days she was able to walk about the house, and her usual health was soon re-established. On the 21st of May I delivered her of a healthy child. In tracking the cord to the placenta, I came in contact with a dead fœtus of five months."

ART. 120.—*Instrument for dilating the os uteri.* By Dr. BRAUN.

(*Klinik der Geburts; and Medico-Chir. Rev.* Jan. 1855.)

"Dr. Braun has contrived an instrument, which he names *colpeurynter*, for the dilatation of the os uteri. It consists of a vulcanized india-rubber bladder, from two to four inches in diameter, and four inches in length, with an india-rubber tube enclosed in horn, fitted with a brass stopcock, and a ring through which to pass a silk belt. When used, the india-rubber bladder is introduced empty into the vagina, then gradually distended by injecting cold or warm water. It is retained *in situ* by the belt fastened round one or both thighs or hip. The horn cylinder is curved in the direction of the pelvic axis; it allows only the upper end of the vagina to be stretched by the bladder; and obviates any unnecessary pressure upon the urethra or external parts. The operation is called *colpeuryntesis*. The advantages of this proceeding over other methods of dilating the os uteri, whatever the indication for that operation, are highly extolled."

ART. 121.—*A case of Symphyseotomy.* By M. MASLIEURAT-LAGEMARD.

(Medico-Chir. Review, Oct. 1855; and Bull. Gén. de Ther. May, 1855.)

We copy Dr. Barne's abstract of this case.

CASE.—The subject of this case was a woman who had borne two children without anything remarkable occurring. In a third labor (November, 1847), the head was arrested, and symptoms of exhaustion set in; the forceps were tried several times in vain. Turning was then resorted to, the feet were brought down, but the head resisted all endeavors at extraction. The woman had now been three days in labor. Choice lay between Cæsarian section and symphyseotomy. The latter was selected. An incision was made in the median line of the symphysis, the cartilage was then divided by a blunt-pointed bistoury. The separation of the iliac bones was effected by pressing with each hand upon the antero-superior spines of the ilia. A slight crackling was heard in the sacro-iliac articulations, and the two branches of the pubis were found sufficiently parted to admit the finger. As soon as this was done, a very gentle traction on the body of the fœtus sufficed to bring forth the head, and finish the labor. The child was dead. A bandage was applied round the pelvis, to bring the pubic bones together. Three days after, shivering and acute pains in the right leg set in; phlegmasia dolens became developed. The patient recovered, notwithstanding, and renewed her occupations at the end of fifteen days. M. Maslieurat-Lagémard has seen her recently; she has been delivered again since of a living child, well-formed, without difficulty.

It is right to add that M. Maslieurat was unprovided with the instruments requisite for cephalotripsy or for excerebration.

ART. 122.—*Incision of the Vulva for the prevention of rupture of the Perinaeum.*

By M. CARPENTIER.

(Révue Méd.-Chir. de Paris, Feb. 1855.)

Two cases are described by this author, which, if they do not show the necessity of this proceeding, at least point out its efficacy as an operation. It was recommended by Michaelis in 1810, since which time it has been practised by Weire, Eichelberg, and other accoucheurs, and does not deserve the neglect in which it has fallen at the present day.

The first case related is that of a primipara where the labor had been protracted, the head of the child having appeared at the vulva, remained there, notwithstanding the strength of the pains, for nearly two hours. M. Carpentier then made an incision, not in the raphé, but laterally in the vulva, and this operation was scarcely completed, when a vigorous pain terminated the labor.

The other case was one requiring the employment of the forceps, which were applied without difficulty; but upon the head appearing at the vulva, the operator saw that extensive laceration of the perineum was threatened. He therefore confided the forceps to an assistant, who maintained them in position, while an incision in the vulva was made during a pain. The child was then extracted without any resistance.

It is well known that laceration of the fourchette is very common in first labors, and that in spite of all the precautions taken in supporting the perineum, it is ruptured in some cases as far as the rectum. Would then, asks M. Carpentier, incision of the vulva prevent such accidents, by substituting a surgical operation for a rent made by nature fortuitously and with violence? Insufficient statistics render any conclusion on this question difficult as yet; experience is required to show its true value as an operation.

ART. 123.—*On the recent epidemic of Puerperal Fever in the Dublin Lying-in Hospital.*

By Dr. MCCLINTOCK.

(Dublin Quarterly Journal of Medical Science, May, 1855.)

A most serious epidemic of this fever, presenting many peculiarities, raged in this hospital, from the beginning of last December to the end of the following February. Unlike the one of 1845, its outbreak cannot be said to have been

either sudden or unexpected, inasmuch as twelve or fourteen cases of puerperal peritonitis and phlebitis, together with a few isolated examples of typhus and scarlatina, had occurred in the house during the preceding nine months.

From the beginning of December to the 14th February, 182 women were confined in the hospital. This is not half the average number of deliveries in the same period, and was owing to a stop having been put, in the latter part of December and during all January, to the admission of patients, except such as were so near delivery that it would have been attended with imminent risk to send them away.

Now of these 182 women, 38, that is 1 in every 5, were unequivocally affected with the symptoms of the disease; and out of these 38 so affected, 17 recovered, and 21 died, making the proportion of fatalities nearly 1 in 8 of all admitted; a frightful rate of mortality, and more than tenfold the average of this hospital.

In three of the above cases the puerperal disease was complicated with scarlatina. Two of these died, and the third made an excellent recovery, though the metritic attack was a marked one, and the scarlatina very severe, showing itself so early as the second day after delivery, and presenting in its course a truly formidable array of symptoms. On two occasions this woman seemed to owe her preservation solely to the liberal exhibition of wine and brandy, and this too at the very time when we had every reason to fear the existence of uterine inflammation.

It would be wearisome and tedious to give the individual history of all these cases, and yet I am quite at a loss how to classify or arrange them, not knowing what to take as the basis of any such classification, as they presented considerable variety in their symptoms, course, and morbid appearances. For example, in many cases, including some of the most malignant, there was no initiatory rigor whatsoever. Again, intense abdominal pain was a prominent feature of some cases from the onset to the termination; whilst in others, equally fatal, there was no complaint of the belly. Vomiting, likewise, was an early and constant attendant upon the disease in not a few instances, whilst in some it did not appear at all, or only at the close. And so on with the morbid appearances; some cases presenting intense peritonitis, others phlebitis, and a few putrescence of the uterus, and these either separately or conjointly. There were two features, however, common to them all, namely, a very rapid circulation, the pulse ranging from 120 to 140, and a marked adynamic type; so marked, indeed, that in two cases only did I feel justified in making trial of phlebotomy, and these, as you may suppose, were selected cases. Yet, in each of them, the supervision of syncope rendered it necessary to discontinue the bleeding before ten ounces of blood had been abstracted, one losing about seven, and the other nine fluid ounces; and what is still more worthy of attention, is the fact, that in neither of these instances did the blood exhibit, after some hours' standing, any of the characters indicative of inflammation. Both these patients died.

In nothing did the various cases differ so much as the manner in which the disease made its invasion. In the majority a rigor announced its first onset, this being speedily followed by pain or uneasiness in the uterus; except in three or four instances, the pain was not by any means intolerable or severe at the commencement, or even for some hours afterwards. Tenderness of the uterus to pressure, however, with perceptible augmentation of its bulk, was almost invariably found to be present from an early period of each case.

The first approaches of the disease, when not ushered in by rigor, were sometimes remarkably slow and insidious,—the only deviations from normal convalescence being a trivial acceleration of the pulse and a slightly furred state of the tongue, with, perhaps, diminished secretion of milk. On two or three occasions the attack began apparently with after-pains, or at least, with pains of an intermitting character, commencing almost immediately after delivery, and so equivocal in their nature, that it was impossible to say when they ceased to be purely spasmodic and became inflammatory. Mr. Hey, of Leeds, in his "Treatise on Puerperal Fever," makes the remark, "that during the epidemic season lying-in women were unusually subject to after-pains, and those of a more violent kind than ordinary." My recent experience is quite in accordance with this observation.

The patient's own representation of her state we found could not always be relied on, owing to her unconsciousness of the presence or progress of the malady. Frequently her statements on this head, though made with confidence and complacency, were yet so utterly at variance with the symptoms and actual condition of the patient, that the most inexperienced observer could scarcely have been deceived by them for one moment. Whether this apparent ignorance of her real state arose from an unwillingness to believe she was affected with illness, or formed part of the disorder, I cannot take upon me to say; but certain it is that no less than four or five of these poor creatures have assured me, in language of gratitude and self-satisfaction, that they felt perfectly well, and this too when their general symptoms plainly forbade all hope of recovery.

This complete unconsciousness of danger, however remote, at a time when the hand of death was almost upon the patient, was a curious and distressing feature of the disease; and is the more remarkable from the fact, that these women were apparently in full and perfect possession of their mental faculties. I have once or twice before observed the same in women dying of pure metro-phlebitis.

Vomiting was not by any means a very prominent or constant symptom, except in the marked peritonitic cases; though in nearly all the fatal cases it came on some hours before death. Several of those who recovered had sickness of stomach, and a few of them even vomited large quantities of the dark-green tenacious fluid which has been aptly compared to green paint.

Guided by the experience of this epidemic, I feel disposed to regard the state of the tongue as a more reliable prognostic than any other *single* symptom. With only one or two partial exceptions, I never saw a patient recover when the tongue had become dry, or brown, or glazed; I have observed this symptom before any of the others had assumed a mortal or even threatening character; nor was it absent in any of the fatal cases of the disease.

At the outset of an attack the tongue was usually white, slightly furred, and somewhat less moist than natural. In many cases this state of the organ has been the very first symptom to excite alarm, and to apprise us of the coming storm.

As the disease made progress, the next unfavorable change observed in the state of the tongue was a dry, brownish streak down its centre, and more remarkable towards the base. This condition gradually extended until the entire dorsal surface of the organ was involved.

I think I am justified in asserting that the prevailing character of the tongue in the late epidemic was a close approximation to what is usually called the "typhoid tongue," and this is one symptom wherein it differed from the epidemic of 1845, in which the tongue presented most usually a broad, soft, creamy appearance. Mr. Hey, in his "Account of the Puerperal Fever," as it visited Leeds, makes the following remarks, which are pertinent to our present subject, as marking the contrast, in this symptom, between the two epidemics:

"The tongue was never incrustated with the dry brown fur of typhus, except the disease was of long continuance, or had been improperly treated. It was generally moist and soft, and though it was not unfrequently covered with a thick white or brownish fur, yet it was *often but little altered from its natural appearance to the last, even in bad cases.*"

Diarrhœa was present in most of our cases, but was not so conspicuous or so formidable a complication as in the epidemic of 1845. I cannot but think that its first production was often attributable to the mercury and some of the other remedies which were used to subdue the disease; had it been otherwise, it is probable we should have experienced more difficulty in restraining it.

Fulness of the belly, with tympanitis to a greater or less extent, was almost universal, but in the individual cases this condition did not become remarkable till an advanced stage of the complaint, except in those which showed from an early period a preponderance of the symptoms referable to inflammation of the peritoneum.

The extreme rarity of cerebral disturbance in the course of puerperal fever is attested by nearly all observers, and the general tenor of my own experience

agrees therewith. Nevertheless, I saw four cases which were exceptions to this rule.

There seemed to exist throughout the epidemic a strong tendency to putrescence or sloughing of the uterus and vagina, and this, too, quite irrespective of the length or character of the labor. In six cases we had direct proof of the existence of this gangrenous condition; two of these were patients that recovered and had sloughing of the vagina.

This constitutes an important feature in the late epidemic, and places it in strong contrast with the disease as it presented itself to Dr. Joseph Clarke and Dr. Collins; for neither of these authors make any mention of such having occurred in their experience.

It has already been stated that in every instance the pulse was found to be very rapid. At the commencement of an attack it was rarely below 112, occasionally much higher: and as the symptoms became more developed, and the disease made progress, the pulse commonly rose to 130, 140, and even 160. The other characters of the pulse were sufficiently remarkable to render them deserving of notice. In no one instance could we have applied to it the epithet "incompressible;" on the contrary, it was invariably soft and yielding, and gave to the finger a sensation that is best described by calling it "liquid or undulating."

During the epidemic of 1845, and I believe in former epidemics also, trismus and convulsions prevailed to an unusual extent among the children born in the hospital. It is a fact, however, worth recording, that not a single example of either of these complaints presented itself during the entire period of the late visitation.

This low, insidious manner in which the disorder not unfrequently crept into the system (if I may so say), taking hold upon the vitals without giving any unequivocal evidence of its presence, constitutes, I think, a remarkable feature of the epidemic, and places it in strong contrast with the epidemics described by Gordon, Hey, Armstrong, Joseph Clarke, Collins, and others.

The treatment, as usual, was not very satisfactory. Dr. M'Clintock's plan was, "to leech promptly, to purge actively, and to stimulate freely."

ART. 124.—*The treatment of Puerperal Fever by large doses of Opium.* By Dr. A. CLARK, Professor of Physiology and Pathology in the College of Physicians and Surgeons, New York.

(*New York Journal of Medicine*, March, 1855.)

Dr. Clark has appended to the new American edition of "Ramsbotham's Midwifery" his experience in this mode of treatment at the Bellevue Hospital, New York. He relates one case, and refers to several others; and from these he thinks the following conclusions are justifiable:—

"1. When a prominent element in 'puerperal fever' is peritonitis, the treatment with large doses of opium is more successful than any other that has yet been proposed.

"2. To be successful, this treatment must be commenced early, and the patient must be brought under its influence as rapidly as the susceptibility of the system can be ascertained by trial.

"3. The quantity of opium required to produce a safe but desirable degree of narcotism, varies greatly in different cases; so that it is necessary to begin with doses that cannot do mischief, and increase every two hours till the influence of the opiate is sufficiently decided.

"4. Every dose, during at least the whole tentative period, should be administered by the physician himself, or by some person on whose knowledge of the effects of opium and whose watchfulness and discretion he can rely. Some young physicians are too bold, and endanger the life of the patient; others are too timid, and do not control the disease.

"5. The opium treatment alone will not cure 'puerperal fever,' when its leading element is purulent metritis, though there is reason to believe that it will control, and even prevent, the peritonitis which generally accompanies it. This conclusion has been confirmed by recent observations.

"6. The tolerance of opium in some cases of puerperal peritonitis almost surpasses belief. Yet in private practice I have not found more than half or two-thirds of a grain of sulph. morph., every two hours, necessary, and have generally begun with less, except for the first dose.

"7. The influence of the opium should be kept up till the pain and tenderness subside, the tympanitis diminishes in some degree, and the pulse falls below 100—then with the concurrence of other symptoms, it should be gradually diminished, and at length discontinued.

"A few remarks and statements may be needed to make some of these conclusions intelligible.

"The usual effects of opium given in efficient doses for the cure of this disease are, a disposition to sleep, but not profoundly; a contracted pupil; perspiration, often profuse; sometimes a red, blotchy eruption; diminished frequency of the respiration; subsidence of pain and tenderness; slight suffusion of the eyes; and, after a variable time, reduced frequency of pulse. Of these effects, three have been chiefly regarded as the criterion by which each particular dose is to be governed. If, when a dose is due, the sleep be profound (the amount of sleep is of little importance, if the patient be easily roused from it), there is reason to hesitate; if the respiration has already been reduced to twelve in the minute, and is very irregular and sighing, the dose should be diminished or wholly withheld; yet so long as the tenderness continues, it is desirable to urge the opiate, but, of course, always within the limits of safety.

"The respiration appears to be the most certain indication of danger. I have not generally aimed to reduce it below twelve in the minute. Yet in almost every case it has fallen, once or twice in the course of the treatment, as low as seven, and sometimes to five. In no instance, however, has the narcotism, taken as a whole, been so profound as in the case detailed above. No instance of fatal narcotism has yet occurred under my observation, nor among the many cases reported to me by others.

"Regarding the tolerance of opiates in some of these cases—at the risk of being charged with rashness and trifling with human life, I will make some extracts from case 7. The treatment was commenced at 10 A.M., on the 26th of December—two grains of opium hourly. At 2 P.M., no change in symptoms, dose increased to gr. iv. At 3, gr. iv. At 4, gr. v. At 5, gr. v. At 6, gr. viij. At 8, gr. x. At 9, gr. xij. At 11, sol. morph. sulph. (sixteen gr. to fl. ℥j), ℥iss. At 12, ℥j. At 1½ A.M. (respiration 6), 0. At 6 A.M. (respiration 12), opium, gr. xij. At 10, sol. ℥j. At 12 M., opium, gr. xij. At 1½ P.M., sol. ℥ij. At 2½, ℥ij. At 3½, opium, xxiv. At 5, gr. xij. At 6½, sol. ℥jss. At 7½, ℥ij. At 9, opium, gr. xiv. At 10, gr. xvj. At 11, gr. xvij. 28th, at 1 A.M., sol. ℥jss. At 2, ℥iv. At 3½, opium, gr. xx. At 4, sol. ℥jss. At 5, ℥ij. At 6, ℥ijss. At 6½, opium, gr. x. At 7, sol. ℥ijss. At 8, opium, gr. xxij. At 9½, sol. ℥iv. At 10, ℥ij. At 11½, ℥ij. At 12, 0. Thus this woman took, in the first twenty-six hours of her treatment, opium, gr. lxxvij, and sulph. morph. gr. vij; or, counting one grain of sulph. morph. as four grains of opium, one hundred and six (106) grains of opium. In the second twenty-four hours, she took opium, gr. cxlvij, and sulph. morph., gr. lxxxj, or opium, four hundred and seventy-two (472) grains. On the third day, she took 236 grains. On the fourth, 120 grains. On the fifth, 54 grains. On the sixth, 22 grains. On the seventh day, 8 grains. After which, the treatment was wholly suspended. This woman was not addicted to drinking, and after her recovery, she assured me repeatedly that she did not know opium by sight, and had never taken it, or any of its preparations, unless it had been prescribed by a physician. This is, perhaps, 'horrible dosing,' and only justifiable as an experiment on a desperate disease. Yet this woman is alive to tell her story, as are several others who took surprising quantities of this drug. But later observations have shown that the tenth to the twentieth part of this maximum is efficient in controlling the disease. So this case is referred to, not for imitation, but because, with similar cases, it is a medical curiosity; and may, perhaps, open some new therapeutical views.

"The results of the opium treatment, in the hands of my professional friends in this city, have not been uniformly successful. This was to have been expected. When the path to success is so narrow, and so little trodden, though

beset with dangers on both sides, it is unavoidable that many will lose it. But, I believe, I am authorised in saying, that those who have seen most of this mode of medication, are most attached to it. It is not to be expected, that in a disease so dangerous as the one under consideration, any plan can be uniformly successful, even with advantages of accurate diagnosis and early treatment; but, when it is remembered that the diagnosis between purulent metritis and puerperal peritonitis is not always easy,—and that this medication is successful in proportion to its early adoption,—we may probably find reason for its failure in other hands, as well as in my own.

“By way of illustrating the vigilance and discretion which must be exercised in the administration of each successive dose of the opiate in this mode of treatment, I will add, that it could never have been fairly tested by me without the zealous, intelligent, and untiring assistance of the house-physicians of the hospital. They visited the patients every hour by night as well as by day, and every dose of the medicine, from the first case to the last, was given by them, and proportioned to the hourly exigencies.”

ART. 125.—*Cæsarian section twice successfully performed on the same patient.*
By M. STOLZ.

(Gaz. Mtd. de Paris, June 16 and 23, 1855.)

M. Stolz has performed the operation six times, with safety to both mother and child in four instances, and with safety to the child in the remaining two. The last of these cases is the one now recorded.

He also enumerates fourteen well-authenticated cases in which this operation has been twice successfully performed on the same patient. In two of these cases the operation was performed *thrice*, the mother not surviving the third. In one the operation was performed four times, and with complete success.

Dr. Mangold, of Bale, operated, first in 1797, and again in 1801, and M. Mautz, in 1837, upon the same patient, who died on the twenty-second day after the third operation.

Dr. Bacqua, of Nantes, operated successfully on one patient, first in 1797, and again in 1806.

Dr. Dariste, of Martinique, operated successfully on one patient in 1805 and 1807.

Dr. Lemaistre d'Aix, operated three times on one patient, in 1805, 1807, and 1814. The patient died five days after the last operation.

Dr. Charmeil operated in 1813 (?), and another surgeon in 1814, on one patient, each successfully.

Chaussier communicates the successful performance of the operation a second time.

Merrem of Cologne, operated successfully on one patient, first in 1821, and again in 1826. Dr. Zwanck operated for the first time on a patient named Adametz; Dr. Weidemann operated a second time; Dr. Michaelis a third, and again a fourth time, with success.

Dr. Rouvin communicates a case where the operation was repeated with success. Dr. Bowen performed the operation twice on one patient, in 1833 and 1835, with success.

Professor Kilian of Bonn, operated successfully on one patient, first in 1832, and then in 1838. In another case, he operated in 1837, and the same patient recovered from a repetition of the operation in 1843.

Dr. Mestenhaeuser operated successfully on one patient in 1840 and 1844.

CASE.—The patient, Adèle Fenninger, æt. 39, was the subject of general rachitic deformity, and had been operated on, three years previously, by Dr. Bach, of Straabourg, who published the case in the “Gazette Médicale” of that city, in 1846. On that occasion the operation was successful, although performed under very unfavorable circumstances, the patient being “radicalement” rachitic, in very delicate health, ill nourished, and suffering from considerable obliquity of the uterus. At the time of the operation, somewhat too large an incision in the abdominal and uterine walls was attended with troublesome protrusion of the intestines; and during the progress of the case, erysipelatous inflammation

of the points of suture, and phlebitis, followed by œdema of the left inferior extremity, were circumstances which more than once threatened the life of the patient; however, by careful attention, these dangers were averted, and a complete cure was obtained in the space of two and a half months.

The second operation, which presents no features of much importance, is minutely described by M. Stolz, who remarks, that from the ordinary course of the second pregnancy, three years after the first operation, it may be concluded that the cicatrization of the uterus had been sufficiently perfect to resist with impunity a second dilatation of that organ; and that the second operation, like the first, had been complete in its success, mother and child being both saved.

M. Stolz argues from these facts that the operation cannot be so serious in its consequences as is generally supposed.

ART. 126.—Extrusion of the Eyeball in the child during birth in two successive labors.
By M. HOFMAN, of Burgsteinfurt.

(*Monatschr. für Geburts*, Dec. 1854; and *Edinburgh Medical Journal*, Oct. 1855.)

This extraordinary occurrence is deserving of attention, not only on account of its rarity, but also in a medico-legal point of view, as being calculated to arouse suspicions of the culpability of those in attendance on, or connected with, such cases, if not to lead to their criminal accusation.

CASE.—M. Hofman was hastily summoned as medical attendant, and on his arrival found the child born, and in a bath. The infant was a girl, at the full period, strong, and well formed. The right eye was hanging out of the orbit, upon the cheek, attached by a few muscular fibres, and surrounded by some loose cellular tissue. About three quarters of an inch of the optic nerve was still attached to the eye, and the ophthalmic vein and artery were torn off close to it. The cornea was bright and transparent, the eyelids were swollen and congested, and the orbit was filled with a grumous fleshy-looking mass. The child did not appear to suffer much, and the head, which was of normal dimensions, showed no depression on any part. The extruded eye was removed, and in a few weeks the eyelid, under appropriate treatment, recovered from the effects of the injury.

The same woman, having again become pregnant, again came under the care of M. Hofman, who found that labor proceeded slowly, and that considerable difficulty accompanied the delivery. The infant on this occasion was a boy, robust and well formed, and the head of the usual size. As in the last case, the right eye was extruded, and totally detached from the socket, which was still bleeding; the eyelids were neither red nor swollen, as in the last occasion; the orbit was filled with coagulated blood, and, above it, there was a fracture with considerable depression of the frontal bone. The child cried incessantly, and died the same day.

A third pregnancy, in which premature labor was induced, and which terminated fatally for the mother, afforded an opportunity of ascertaining, by post-mortem examination, the cause of these remarkable injuries in the two former accouchements. The sacro-pubic diameter was only three inches, and the promontory of the sacrum projected very much. The transverse diameter was $4\frac{1}{2}$, and the oblique $4\frac{1}{2}$ inches. No obliquity or exostosis existed in the pelvis, and the vertebral column was straight; the symphysis pubis was somewhat separated.

There seems no doubt that the depressed fracture of the frontal bone was produced by the promontory, and that both cases were merely different degrees of the same effect, arising from the same cause. The compression, exerted through the frontal bone upon the roof of the orbit, produced expulsion of the eyeball to a certain degree, and the uterine contractions continuing to go on, the eye, already protruded from its socket, became arrested by the prominence of the sacrum, and was dragged and torn from its connection during delivery.

ART. 127.—Case of quadruple birth. By Dr. WM. RANKIN, of Shippensburg.

(*American Quarterly Journal of Medical Science*, April, 1855.)

This case is told as follows:—

April 20, 1854. I was called to visit the wife of Mr. John Tarvin, farmer, who

was supposed to be in labor, having completed the full term of her fourth pregnancy. On my arrival, I found a child delivered; but, on examination, ascertained that there was another contained in the uterus. After waiting nearly an hour from the time the first child was born, for further uterine contractions, I ruptured a set of membranes that presented in the form of a pouch at the os uteri, when a pain came on and delivered another child. On examination over the region of the uterus, I discovered the presence of another child; and no pain coming on, after a reasonable delay, I ruptured a third set of membranes, when a powerfully expulsive contraction took place and expelled a third child. From the usual examination, I ascertained that there was yet another child to be delivered; and no pains coming on, I resorted to the plan of rupturing the membranes, when almost immediately a pain occurred and effected the delivery of a fourth child. By a little manipulation over the region of the uterus it contracted and expelled from its cavity two placentæ, to one of which three cords were attached, and to the other but one; the whole mass not larger, I think, than I have often seen after the delivery of one child. The cords were something smaller than the average size. The uterus afterwards contracted well, and there was no more hemorrhage than takes place after the majority of cases of parturition. The woman appeared very much exhausted and overcome by distracting emotions in consequence of the enormous brood of children to which she had just given birth; but after encouraging and consoling her, as well as I could, by pointing out her duty in the case, and assuring her that there would, undoubtedly, be ample means provided for their maintenance, she soon assumed a cheerful countenance, her general debility gradually abated, and she progressed through her confinement as favorably as most women do after giving birth to a single child.

The first and last born were rather larger than their mates, and were all apparently healthy and viable, and, according to their mother's reckoning, had come to their full time. Although I unfortunately neglected weighing them, I think they would have averaged four or five pounds.

They were all of the male sex. The hair nearly red, and the complexion florid in all of them.

The mother is a woman of slender and rather delicate form, of medium height, and generally healthy, of about thirty-five years old; and, before this quadruple birth, had had three daughters at as many births; five years have elapsed since the last. Her complexion and hair are dark. The father is a stout, athletic, healthy man, of about thirty-eight years of age; hair fair and complexion florid; of sanguine temperament.

The first-born of the children, about eight weeks after birth, sickened and died after a few hours' illness, most probably from the almost unavoidable irregularity in giving it nourishment.

After the milk was fully secreted, the mother had, for a month or so, plenty of nourishment for them all, after which time food was required from other sources, principally cow's milk diluted with water, and sweetened with loaf sugar. The three surviving are now, 14th of January, 1855, quite healthy and thriving children.

ART. 128.—*Synopsis of thirty cases of Ovariectomy occurring in the practice of the Author.* By Dr. WASHINGTON ATLEE, of Philadelphia.

(*American Journal of Medical Science*, April, 1855.)

In this paper we have short summaries of all the cases in which Dr. Atlee has performed this operation. Some of the cases, however, must be deducted, for in them nothing more was done than to make an exploratory incision. Deducting these, twenty-six cases remain, of which twenty-two are cases of ovarian, and four of uterine disease.

Of the ovarian cases, eleven deaths are recorded, and eleven recoveries. Of the uterine, two deaths and two recoveries.

Of the thirteen recoveries, ten are now alive,—five of whom were operated on between March, 1844, and January, 1852,—one in September, 1853, and four between April and December, 1854,—and three are dead; one dying thirty-nine

days after an attack of cholera, from eating heartily of duck, &c.; one, thirty days after, of starvation, caused by excessive irritability of stomach, the consequence of pregnancy; (Dr. Atlee asks, whether the production of abortion, the patient being two months gone, might not have preserved life in this case?) and one from phthisis pulmonalis, three years after the operation.

The condition of health of the ten now living, a most important consideration, is not noted, excepting in one instance, where it is represented as being perfect. Two cases have been pregnant, but miscarried, and one has given birth to two large, healthy children since the operation.

In the thirteen which died, death was caused by peritonitis in four cases, by exhaustion in five, by hemorrhage in one, secondary hemorrhage in two, and by gangrenous perforation of the jejunum in one.

The period of death, after operation, was nine hours in one case; thirteen hours in one case; on the third day in five cases; on the fifth day in two cases; on the sixth in three cases; and on the twenty-second day in one case.

The average time of death of these cases was about five days. The operation was performed with the hope of arresting impending death in seven cases, four of which terminated fatally.

Of the twenty-six cases, in all of which extirpation was performed, 15, or 57 per cent. of the whole number, died within forty days.

Of the eleven remaining cases, one died of phthisis pulmonalis in three years after operation, and ten were alive up to the period of the publication of Dr. Atlee's paper.

The condition of health of those still living is not noted, excepting in one instance.

With these results, it really becomes a serious question whether the operation is justifiable, for we can scarcely suppose that the operation will be more successful in the hands of other surgeons. At any rate, it is not likely that the surgeons will have greater practical acquaintance with the operation.

ART. 129.—*The hereditariness of Ovarian Disease.* By Dr. LEVER.

(*Guy's Hospital Reports*, 1855.)

Dr. Lever adduces the fact of six deaths and one impending death, in the members of one family, as a most conclusive proof of the hereditariness of this affection, as indeed it is:

" M. F., died at the age of 79 years.			
M. A.,	"	77	"
M. S.,	"	48	"
E. S.,	"	28	"
M. D.,	"	49	"
E. D.,	"	20	"
Inspected by Mr. Callaway.			
Operated on unsuccessfully by Mr.			
Key, in 1843.			
M. S., an occupant at Guy's, who ere long will die."			

ART. 130.—*Rupture of the Perineum and recto-vaginal Fistula treated by cauterization.* By M. CLOQUET.

(*Archiv. Gén. de Méd.*, Feb. 1855.)

In a memoir submitted to the Academy of Sciences at Paris, M. Cloquet states that he has successfully applied the treatment recommended by him in cases of split palate ("Abstract," xxi) to cases of ruptured perineum and recto-vaginal fistula. If the treatment be persevered in, he says, the edges of the unnatural opening are sure to unite. The memoir contains several cases, which show the comparative rapidity, as well as the completeness, of this mode of operating.

ART. 131.—*Recto-vaginal Fistula treated as fistula in ano.* By Mr. COCK.

(Guy's Hospital Reports, 1855.)

This case was very analogous to fistula in ano, and it was treated accordingly, that is, by the complete division of the tissues intervening between it and the external surface. The only objection which appears to apply to this operation is the fear that the cicatrized perineum may not be equal to bear the strain of future confinements, but this objection, in Dr. Lever's opinion, is of no great weight.

CASE.—S. P——, æt. 37, was admitted on September 20th, 1853, under the care of Dr. Lever.

It appears that, fourteen months previous to her admission, she had a lingering labor of her fourth child, and that ever since that period she has been inconvenienced by the discharge of feces, and the passage of flatus, per vaginam. She had been treated as an out-patient for some time, chiefly on account of leucorrhœa, and the treatment for this was first prescribed on her admission; it consisted in the administration of Julep. Magnesiae, ter die, with an occasional purgative of Poly. Rhei Salinæ, and the use of Decoct. Tormentillæ pro Injectione. Under this, and the use of quinine, she was relieved of her leucorrhœa, and attention was then directed to the fistula, with a view to operation. On examination, it was found that a fistulous opening existed in the vagina, and was felt by the finger about an inch beyond the fourchette, although not easily detected, as it was hidden by a fold of mucous membrane. On the introduction of another finger into the rectum, by a little manipulation, the tip of its fellow could be reached.

On the 10th of October, Mr. Poland determined to perform an operation. A probe was introduced through the opening in the vagina, and it was found to pass in an upward direction in the recto vaginal septum before it communicated with the bowel. When it reached here, the end of it was seized, and brought out at the anus. The probe thus served as a guide for the bistoury, which was introduced by its side into the rectum from the vagina, and the point being there met by the forefinger of the left hand, the operation was completed in the manner of that for fistula in ano, the whole of the tissues between the rectum and vagina being divided in the median line of the perineum. But slight hemorrhage followed; the edges of the wound were kept asunder by oiled lint, and the patient was put to bed. From this period to the 27th of the same month, the patient's bowels, habitually costive, did not act, and as she was somewhat feverish, Dr. Lever ordered her Mist. Oleosæ c. Rheo, 3iss, which operated effectually.

The lint was withdrawn gradually,—i. e. was introduced less deeply at each dressing,—and the wound allowed to heal from the bottom.

Perfect cicatrization not ensuing (notwithstanding the use of black wash) as rapidly as could be wished, it was thought better for her to leave the hospital for change of air, and she was accordingly presented on the 22d of November.

Subsequent accounts of the patient informed us that in a few days the wound had completely healed, and that no further inconvenience had been felt.

I have seen this patient subsequently, and she is perfectly well.

ART. 132.—*On the origin of retro-uterine Hematocele.* By M. LAUGIER.

(Gaz Méd. de Paris, Mars 10, 1855.)

M. Laugier read a communication on this subject at the meeting of the Academy of Sciences of February 26. After adverting to the imperfect state of our knowledge on this disease, he entered at some length into several interesting questions connected with it, and concluded with the following remarks as the result of his investigations:

1. The spontaneous evolution of the ovule is, as has been alleged, an occasional cause of retro-urine hematocele.

2. The physiological state of congestion in the ovaries during this spontaneous

evolution, and the persistence of the opening in the Graafian vesicle, do not occasion retro-uterine hematocele.

3. To produce this there must exist an increased degree of congestion, sometimes occasioned by accidental causes, during, or a few days after, menstruation. Abortion is not an immediate cause of hematocele, as has been erroneously supposed.

4. It is especially the recurrence of this spontaneous evolution which gradually increases the volume of the hematocele.

5. The ovarian vesicles successively opening into the cyst of the hematocele remain open there, so that the ovary is destroyed by a small number of spontaneous evolutions taking place in the condition which that organ presents at the commencement of hematocele.

6. The rupture of a Graafian vesicle affording a passage for the blood which escapes from the ovary, the cyst of the hematocele will be most frequently intra-peritoneal.

7. Spontaneous evolution of the ovule and hematocele have one character in common, namely, pain situated in one side of the abdomen, and the seat of which is the ovary where the vascular evolution occurs.

8. The rut may occasion ovarian congestion in animals, and may be followed by rupture of that organ, that is to say, by consequences simulating retro-uterine hematocele.

ART. 133.—Removal of the entire body of the Uterus by the large abdominal section.
By Dr. E. R. PEASLEE.

(*American Journal of Medical Science*, May, 1855.)

The following is a short abstract of this case :

CASE.—A widow, æt. 35, and mother of four children. Death happened on the fifth day after the operation, from gangrene produced by strangulation of two hernial protrusions. The operation was undertaken for the removal of an ovarian tumor, the diagnosis of which was, to all appearances, very clearly made out. The mistake in the diagnosis, which the subsequent steps of the operation showed, was most certainly not a culpable one. On examination the tumor was found to be a fibrous growth, already softening and degenerating in its central portions. "It must have originated at the right side of the fundus of the uterus, and in its substance, though near its surface. Death, which occurred on the fifth day after the operation, appears to have been produced, not from the removal of the uterus, but from the complications of two hernial protrusions,—a small one near the lower end of the incision, and a larger near the upper end—produced by coughing and retching. These hernial protrusions had occurred the morning after the operation, in the absence of Dr. Peaslee; and when examined, they were livid, and covered with plastic exudation. A portion of the sutures were removed, and they were returned. The post-mortem appearances went to show that the gangrene extended from the portion of the bowels implicated in the hernia, and thence to the peritoneum.

ART. 134.—Sequel to a case of extirpation of the Uterus. By Mr. WINDSOR,
Surgeon to the Manchester Eye Hospital.

(*Lancet*, May 19, 1855.)

The operation in this case was performed August 22d, 1818, and an account of the case was communicated to the Royal Medical and Chirurgical Society on June 22, 1819, and printed in the tenth volume of the Society's 'Transactions.' The patient died from an accident, October 27th, 1854, aged sixty-eight years. Her age at the time of the operation was thirty-one. For the first ten years she had irregular discharges of coagula at intervals varying from two to six months; these intervals gradually became much longer, and all discharge of blood ceased about the age of fifty. The following is the author's account of the state of the parts after their removal from the body: "The preparation shows well the os uteri apparently in its normal state; it is about half an inch in width. A probe

passed through it into the blind or closed cavity beyond, does not penetrate more than three-eighths of an inch. This, therefore, is all that remains of the cervix uteri by the operation performed in 1818. The communication with the abdomen seems to have closed well. Under the abdominal aspect of the cervix (or opposite to the vaginal one) a sort of extended membranous or fleshy surface is seen, on which a portion, apparently, of one Fallopian tube, with its fimbriated extremity, can be traced; and near it is an appearance of an atrophied ovarium. On the opposite side are somewhat similar appearances of tube and ovarium. Both terminate in the membranous-like expansion near to the cervix uteri, each being about two inches in length." This case is rendered additionally interesting from the fact that the woman was four times the subject of strangulated hernia on the right side; that on the first occasion, no surgical treatment being permitted, the tumor sloughed on the eighth day, feces were discharged from the wound, and in six weeks the opening spontaneously closed. This occurred about 1840. In 1850 she was twice operated on, at intervals of six weeks; and in 1853, the fourth occasion, the hernia was returned by the taxis with some difficulty. Her death was the result of a severe injury to the head, occasioned by an accident while travelling.

ART. 135.—*On the high operation for Stone in the Female.* By Dr. W. PARKER, Professor of Surgery in the College of Physicians and Surgeons of New York.

(*New York Journal of Medicine*, March, 1855.)

After some remarks upon the history of this operation, Dr. Parker relates three cases, which comprise his experience in the matter. These cases we subjoin. Dr. Parker considers this operation to be safer than any yet pursued in females, particularly where the precaution is taken of hooking up the walls of the bladder, before laying the viscus open, so as to prevent urinary regurgitation or infiltration.

CASE 1.—Mrs. L., æt. 53, married, and the mother of ten children, had always resided in the interior of Ohio, and had invariably enjoyed good health until about four years previously to the time of her coming under my observation. Her first complaint was of suffering in passing water, the symptoms being those of urinary calculus. The physician in attendance had examined the bladder with the sound, and detected the presence of a stone. I was called in consultation, with special reference to the operation. As the patient resided some 80 miles distant from me, and her sufferings were becoming more and more aggravating, there seemed no alternative but the knife.

The stone was large, and I determined to perform the high operation. The operation was commenced by injecting the bladder with warm water. To accomplish this, the patient was placed upon the table in the proper position for lithotomy, and the fluid being slowly injected, an assistant pressed the urethra firmly against the arch of the pubes, to prevent its escape. This preparatory step having been taken, I proceeded to make an incision above the pubes, and extended it two and half inches along the linea alba, cutting down to the bladder. I now opened the bladder with a pointed bistoury, which was followed by such a regurgitation of fluid through the artificial passage, that the assistant was directed to remove his finger from the urethra, and allow the contents of the bladder to escape. I then introduced the *brise-pierre* of Baron Heurteloupe into the bladder, through the urethra, and separating the blades, I raised the fundus towards the external opening, until I was able to reach it with the tenaculum. With this instrument, and the aid of an assistant, I kept the bladder firmly drawn up to the external opening. The incision not being sufficiently free, was now enlarged, and the finger being introduced, the forceps were readily carried into the bladder, and the stone seized and removed with great ease.

The operation was terminated by closing the upper portion of the wound, and leaving the lower part open to admit of the free escape of urine or pus, and thus prevent infiltration. The patient recovered rapidly. The stone was nearly two inches in length, and one and a half in breadth.

CASE 2.—Miss M. æt. 53, living in the country, consulted me for symptoms of

calculus, which had existed for the last seven years. On examination, I found a large stone. The urine contained pus, and epithelial scales from the bladder; regarding this organ, however, sufficiently sound for the trial of lithotripsy, I proceeded to prepare her system for this operation, by vegetable diet, demulcent drinks, and attention to the bowels.

The operation was commenced by the usual injection of warm water. I then introduced the lithotripter, and seized the stone, but could not break it by the force of the hand. With the hammer, I succeeded in breaking off about one drachm, in small pieces. These were proved to be oxalate of lime, on applying proper tests. These attempts were repeated up to the ninth day, but with no success; and in the meantime the bladder had become inflamed with considerable constitutional disturbance. She was now kept quiet in bed, as all motion was attended by much pain.

In about three weeks the system became tranquil, and I proceeded to remove the stone by the high operation. The following were the steps of the operation which I performed.

First.—The patient was put fully under the influence of chloroform.

Secondly.—The bladder was injected with flax-seed tea, and owing to the system being under the influence of the anæsthetic, the injection was introduced without any resistance, and the organ well filled.

Thirdly.—An assistant prevented the escape of the fluid, by pressing the urethra against the pubic arch.

Fourthly.—The pubes being well shaved, I made an incision along the linea alba, through the fat and muscles, until I reached the bladder.

Fifthly.—I now hooked strongly through the bladder, by large tenacula, and gave them in charge of assistants. I then punctured the bladder with a pointed bistoury, and made an incision about one and a half inch in length. No regurgitation took place. Upon my finger I introduced the ordinary nasal polypus forceps, and easily removed the stone.

Sixthly.—The assistant now removed his finger from the urethra, the fluid escaped, and the hooks were removed.

The upper part of the wound was closed with a suture and straps, the lower portion being left open for the escape of any discharge. The operation was performed on the 12th of October, 1853, and on the 22d she was able to sit up. The result was very satisfactory.

CASE 3.—Patient was Mrs. E., æt. 47, a widow. This lady had suffered from a stone in the bladder, until she could hardly move about, and at the time she came under my observation, her sufferings were intense. The urine was alkaline, and loaded with pus and blood.

I ascertained that I could do nothing with the lithotripter, and accordingly advised an operation as the only hope of relief. She at length made up her mind to submit to the operation, and sent for me for the purpose of having it performed.

On the 25th of August, 1854, I operated according to the plan laid down in the preceding case, and notwithstanding the amount of disease of the bladder, the patient improved greatly, and three months after she was comfortable, but had a slight opening above the pubes, from which pus at times escaped.

ART. 136.—*Case of Stearrhæa Nigricans.* By Dr. NELIGAN.

(*Assoc. Med. Journal*, May 18, 1855.)

In the "Dublin Quarterly Journal of Medical Science" for May, 1855, Dr. J. M. Neligan has published an essay on black discoloration of the skin of the face. The affection (at least in the intense form described by Dr. Neligan) is rare, but some examples have been well described, especially by the late Mr. Teevan, in vol. xxviii of the "Med.-Chir. Transactions," and Dr. Yonge, of Plymouth, in the "Philosophical Transactions," in the year 1709.

The history of the case related by Dr. Neligan was communicated to him by Dr. Quinan, physician to the Donnybrook Dispensary. The following is an abstract:

CASE.—E. D——, æt. 21, unmarried, a dressmaker, of leucophlegmatic habit,

had been in good health till about the age of 19, when the catamenia, which had been regular, ceased altogether. Shortly afterwards, a large patch of erysipelatous redness appeared on the right side of the body, and soon disappeared; and it reappeared and disappeared (its duration being prolonged each time) at each monthly period. Tartar emetic in small doses was prescribed by a medical man, under the idea that the redness was from erysipelas. She, however, had a fearful attack of nausea and vomiting, and had since been subject to sickness of the stomach, occurring regularly half an hour after the first meal in the morning, followed by vomiting of food. She had a troublesome cough, with loss of appetite and of strength.

In August last, she went to England to try the effect of a short sea voyage and change of air; but she was there told by a medical gentleman that she was threatened with consumption, and she returned home. At this time the erysipelatous redness ceased to appear, though the catamenia were still absent; and she perceived, after a fit of retching, some blood in her expectoration.

At the next monthly return (September) the symptoms were more violent; and she threw up about half a pint of reddish-brown matter every morning for four or five days.

In October the vomiting returned; and now, for the first time, a dark, bluish-black stain appeared at the inner canthus of the left eye. When Dr. Quinan saw her, there was a large patch under each eye; the skin was tender; and the vomiting continued every morning. The treatment employed consisted in the administration of nourishing diet, tonics, emmenagogues, and stimulants, with the free use of open air exercise.

Dr. Neligan saw the patient in December, 1854. The girl was much emaciated, except in the face, and highly hysterical. The dark stains now covered nearly the whole of the right upper eyelid, and part of the left; both under eyelids were completely stained, and the dark patch extended on the right cheek. The color was precisely that which would be produced by Indian ink, and rather set-off, or even gave additional beauty to a pleasing face. On examining with a lens, it was evident that the stain was dotted over the skin, corresponding to the sebaceous glands. No attempt was made to remove the stain by washing, on account of the pain which she had found the process to induce, and because the surface of the skin was exquisitely tender.

In April, 1855, Dr. Neligan again saw the patient. The general health was more broken down, although the cough and vomiting of dark matter had diminished. The dark stains had become deeper in color, and had extended below the malar bones and on the alæ of the nose. On the skin, at the confines of the stains, an exudation of the yellow matter of the sebaceous glands had taken place, precisely similar to what occurs in *stearrhœa flavescens*; and wherever this sebaceous fluid had been rubbed off, or the subjacent parts irritated, the integuments were inflamed, the sebaceous follicles hypertrophied, and their orifices enlarged, and in some cases filled with black matter.

Dr. Neligan also relates the history of a case communicated to him by Professor Law, of the College of Physicians in Ireland, occurring in a lady who consulted him twelve [three?] years ago. This case agreed with that of Dr. Quinan in the irritability of stomach, perverted appetite, and uterine derangement; but in Professor Law's case there was no pain, though there was some aversion to light.

All the cases of black discoloration of the face which have been recorded, Dr. Neligan states, occurred in young females affected with derangement, or partial or total suppression of the catamenia: in three—those most accurately reported—there was black vomiting; and in one, at least, the black color disappeared with the restoration of the uterine function. Dr. Neligan terms the disease *stearrhœa nigricans*; and considers that, as not uncommonly occurs in females in whom the menstrual function is deranged, the sebaceous secretion is augmented in quantity, and in some cases is stained with the coloring matter of the blood—this being analogous to black colored vomiting, dark sputa, dark urine, or hemorrhagic subcutaneous extravasation. In the treatment, the evident indication is to restore a healthy state to the uterine function.

ART. 137.—*Case of vicarious secretion of Milk.* By DR. S. WEIR MITCHELL.*(American Journal of Medical Science, July, 1855.)*

This curious case is thus related :

In the early part of July, 1853, Mrs. C—, æt. 20, was delivered of a child. The supply of milk proved scanty. Four weeks after delivery, a large mammary abscess formed in the left breast. This was opened, and, under treatment, became well in the course of three months. During this period, she nursed her child with the right breast. As the milk continued to form, though in small amount, in the left breast, the child finally obtained milk from both mammaræ. At the close of a year, the mother became feeble, and subject to constant bronchial irritation. Her cough increased to such a degree that, for obvious reasons, she was directed to wean her child. The change was effected too suddenly, and she was told, accordingly, to allow her babe a part, at least of her own milk. In the interval of two days, the breasts had become swollen, and excessively painful. It was now found that the child could obtain no nutriment from this source, and that even the pump failed to empty the mammaræ. Purgatives were ordered, and a water-dressing locally applied. Next day I found the breasts less painful, while the cough had become dry, hard, and almost constant. On the succeeding morning, she was greatly relieved by a loose cough, which enabled her to expectorate a quantity of white, firm sputa. I was told that Mrs. C. was spitting up milk, and the white substance in question was exhibited in confirmation of the statement. During the day, upwards of a teacupful was thus cast up. This strange formation continued for a fortnight, to the manifest relief of hitherto urgent symptoms of declining health. My visits were made at irregular intervals, and for a time my patient was closely watched by the family ; but, as the secretion was persistent in amount for a time, and as it was often coughed up in my presence, I see no reason to suspect collusion or hysterical deception. At the end of a fortnight the milky sputa became more pale, and at length gave place to mere mucus.

On the third day, and at intervals afterwards, I collected portions of the sputa, and submitted them to rigid examinations.

I found the discharge to consist of white clots, floating in a thick fluid, also of a white hue, and mingled with ordinary mucus. Very often a clot of yellowish muco-pus was enveloped in a covering of thickened milk. It is to be noted that the milk was, for the most part, in this clotted condition, and possessed the lacteal odor to a greater degree than the ordinary secretion itself.

Microscopic analysis revealed the presence of very perfect milk globules, mingled with compound granular cells, mucus corpuscles, and epithelia. I evaporated about one ounce and a half of the fluid, and by repeated treatment with ether, collected a small amount of fat or oily matters. Nitric acid was found to coagulate the filtered fluid, whilst acetic acid produced but a slight cloud. Lastly, I was told by the patient that the sputa tasted like milk.

Mrs. C. was delivered of her second child in February of the present year. Her cough never left her, and at the period last alluded to, she was far advanced in phthisis. Her breasts were well filled, but her extreme feebleness obliged her to resign her child to a wet nurse. The breasts were artificially emptied, aperients employed, and no signs of her former trouble appeared until seven days after birth. At this time, for some forty hours, she coughed up a thin white fluid, mixed with the pus from a tuberculous cavity in the right lung. At the close of the period of time just mentioned, the pulmonary sputa regained its color. I examined this specimen with the microscope only. It was thin, and small in quantity, but did not otherwise differ from the specimens obtained during the last year's illness. Both alike contained milk globules. The recurrence of the milky sputa was first observed by me, and pointed out to the patient. This, with the other facts above alluded to, induce me to regard the above stated case as indisputably one of vicarious or metastatic secretion of milk. We are thus called upon to admit that some part of the bronchial surfaces may repeat the role which nature has assigned to the mammary gland.

It may be as well to add that, in stating a case of interest mainly to the phy-

siologist, I have avoided all detail as to the remedial measures employed from time to time.

(C) CONCERNING THE DISEASES OF CHILDREN.

ART. 138.—*On the treatment of Croup by large doses of Tartar Emetic.* By M. BAIZEAU.

(*Edinburgh Monthly Journal*, May, 1855.)

The frequency and fatality of this disease, confer an additional value on any remarks suggestive of improvement in the measures adopted for its cure. With this view the subject appears to have been more fully investigated in France than in this country, and several important innovations in the method of treatment have originated there, as the result of this system of inquiry and observation.

Among these the employment of tartar emetic in large doses was suggested, as M. Baizeau allows, so far back as 1839, by M. Bazin; the same remedy was also proposed, but not employed, by Laennec; and in the *Dictionnaire des Dictionnaires*, under the article *Croup*, we find it recommended by M. Fabre. Notwithstanding the opinion of such authorities regarding its value as a remedy in this disease, the matter seems to have been neglected; and it is with a view to reviving this mode of treatment that M. Baizeau has published his interesting communication in the *Gazette Médicale* for March 10th. Several cases are there cited by him as examples of the successful treatment of the disease by this method, and others are referred to where similar results have been obtained.

The success attending the employment of tartar emetic in croup, M. Baizeau ascribes to the contro-stimulant action of this substance, and not to its effects as an emetic, believing that its influence here is somewhat analogous to the apparently specific power exerted by it in other diseased conditions of the respiratory organs.

However, the vomiting necessarily arising from such doses as are recommended by M. Baizeau, can scarcely but be considered as materially assisting, if not in some cases superseding, the other effects of this remedy; the dose in different instances varying from six to twelve grains of tartar emetic in four ounces of water, and a teaspoonful of this to be given every two hours.

In combination with ipecacuanha, it is the emetic usually employed in the *Hôpital des Enfants Malades* at Paris, and only in those cases where it fails in producing its effects are others resorted to; the object being, that whatever emetic may be employed, the vomiting arising from it should be energetic and repeated, as would result from the doses given by M. Baizeau. And in support of this doctrine, M. Valleix has shown that out of fifty-three cases of croup, only one cure resulted in twenty-two of these cases where emetics were given sparingly; while fifteen recovered out of thirty-one cases in which they were administered more freely.

M. Baizeau, however, asserts that the absorption of this remedy into the circulation subsequently to the cessation of vomiting, and the fact that its contro-stimulant properties are thus brought into operation, afford the true explanation of its success. For, says our author, it generally becomes more difficult to excite vomiting in children after a few successive doses of any emetic, and thus as the remedy is longer retained by the stomach, the chances of its absorption are increased, and in this case its contro-stimulant action consequently becomes more active.

We do not clearly see, however, the manner in which M. Baizeau reconciles this theory with such statements as that of Barrier, who mentions that from numerous facts it is proved that emetics, among which he mentions tartar emetic, are efficacious only in those cases where they are followed by vigorous and continued vomiting; or with the twenty-two cases of M. Valleix, quoted above, in which the vomiting was mild, and in which only one recovery took place. This apparent discrepancy, however, is at once removed, if we recognize the efficiency of tartar emetic as an emetic properly so called, and as at the same time, a powerful contro-stimulant, the combined actions mutually contributing to account for its success. In this way, along with its rapidity of action, and appa-

rently specific powers, its superiority in such cases would be immediately apparent, as possessing advantages which are not to be found in any other remedy.

Although M. Baizeau has thus attached, perhaps, rather little importance to the occurrence of the vomiting produced in the first instance by this substance, his paper in other respects is a good one. And while the number of cases treated in this manner has been too small to justify any decided general opinion as to its merits, at the same time many facts in connection with these cases, would at least induce us to place more confidence in this remedy, and encourage its further trial by medical men.

ART. 139.—*Tracheotomy in Childhood.* By M. GUERSANT.

(*L'Union Médicale*, Jan. 16, 1855.)

In this paper M. Guersant calls attention to the greater frequency with which he has been called upon to perform this operation at the Hôpital des Enfants Malades. Thus, in 1850, there were 10 operations; in 1851, 25; in 1852, 30; and in 1853, 60. M. Guersant concludes from these facts that croup is on the increase in Paris; a conclusion doubted by M. Denonvilliers, who ascribes these increasing numbers to the greater confidence of the public in the resources of surgery in such cases. As regards the success of the operation, M. Guersant remarks that out of 161 cases in which it was performed there were 36 cures; and it must be borne in mind that it was only performed as a last resource when asphyxia was considered to be imminent. The rest of the treatment was much the same as is usual in this country. M. Guersant also frequently employed cauterization of the larynx, but considers that this treatment does not deserve the credit it has attained.

M. Archambault directs attention to a peculiar phenomenon which frequently attends on recovery in those cases of croup in which tracheotomy is performed. As soon as the glottis is free from false membranes, it is observed that the infant, in swallowing, is extremely apt to be distressed by the passage of fluid matters into the larynx. This difficulty of deglutition has occurred in the practice both of M. Trousseau and of M. Guersant. The former attempts to remove it by giving only solid or semi-solid food; the latter proposes in extreme cases to pass the œsophagus tube. M. Archambault recommends a simpler method. He removes the canula, and applies the thumb very firmly over the opening. When the child has made several respirations, and these have become regular and natural, he allows it to drink, after directing its attention to the necessity of caution. In this way drink can be taken. M. Archambault considers that this difficulty of deglutition depends on an impaired sensibility of the glottis, and a want of harmony between the act of deglutition and respiration, owing to the artificial manner in which the latter has been effected through the canula. He has not witnessed this symptom except when the respiration was notably accelerated.

ART. 140.—*On incontinence of Urine in Children.* By Dr. D. D. SLADE.

(*American Quarterly Journal of Med. Science*, July, 1855.)

Dr. Slade, following M. Trousseau, has given belladonna in several of these cases, and with the most satisfactory results. "So far as our experience goes," he says, "we have derived very satisfactory results from the use of belladonna in several cases of nocturnal incontinence." But as Trousseau explicitly says, "it did not have the same good effects in those cases where the enuresis occurred during the day, although it greatly relieved the trouble. We have, however, found that a larger dose was required than is recommended by that physician in order to have the desired effect."

He also gives a quotation from one of M. Trousseau's clinical lectures which will explain this physician's opinion and practice in this disorder:

"This infirmity I consider a neuralgia or *névrose*, and it is much more common than is generally believed. It has been thought nearly incurable; but, with belladonna, is one of the most easily cured of all diseases.

"Those children who are troubled in the daytime are not cured by belladonna.

"A child going to bed with an empty bladder will pass his water during the first two hours, sometimes during the first hour; placed in bed at nine o'clock, the bladder will throw off its contents at ten o'clock, and then retain them until eight o'clock the following morning, being full at that time. The accident generally happens once only during the night, but sometimes twice. During the first hours of sleep, you generally find in young men and children an erection. The question may be asked, whether something of the same kind may not take place in the bladder. This complaint is most common among young girls, and is generally cured spontaneously at the age of puberty; but when this is not the case, do what chance has shown to be efficacious.

"Two young girls afflicted with whooping-cough were treated with belladonna, and were cured both of the cough and of the affection now under consideration.

"*Treatment.*—The first precaution is to break up the bad habit of the organs. Wake the child at the end of an hour, and make him pass his water; after several days, wake him at the end of an hour and a half. This is only accessory.

"Give at the moment of going to bed, ext. belladonna in pill, commencing with gr. $\frac{1}{2}$, waking the child as has been described. After eight days, increase the dose to double; at the end of eight days more, treble it, waking him later and later, and finally not at all. When during fifteen days he has been free from the difficulty, diminish the dose, or give it only every second day, then every third day, &c. Even if the child does not regain its bad habits, renew the medicine, after two, three, and sometimes five months' cure, for he may then again begin to wet the bed. Resume the medicine, as first given, several times, making the intervals longer and longer.

"The incontinence may be aggravated by eczema, caused by the constant irritation of the urine; and the urethra becoming inflamed, the desire to pass water is increased. For this state of things a sol. sulph. zinci is the best application.

"If belladonna fail, try strychnine, flagellation, and stinging with nettles. The two latter may be useful as means of intimidation, or perhaps they may have some reflex power."

ART. 141.—*Treatment of Albuminuria in Infants.* By Professor MAUTHNER.

(*Journ. des Maladies des Enfants*; and *Edinburgh Monthly Journal*, July, 1855.)

The treatment of this affection, like all other complications of dropsy, has hitherto consisted in the administration of diuretics. In the dropsy succeeding scarlet fever, and which is accompanied with hematuria and albuminuria, Professor Mauthner, on the contrary, scrupulously avoids everything which, by leading to an increased excitement of the kidneys, may produce inflammation of these organs, or possibly give rise to Bright's disease. He has seen many cases where a cure has been obtained by well-regulated dietetic treatment, when diuretics have failed in checking the progress of the disease. In such cases he recommends the exclusive use of milk, and of rice and milk, and allows in addition a decoction of gum or of linseed. Under the influence of a milk diet there is established an abundant flow of non-albuminous urine, while the dropsy in consequence disappears. If the administration of milk is not followed by recovery, the effect of alkalies ought to be tried, with the view of modifying the urinary secretion. The medicine to which the preference is given is urea, either in its pure state or as nitrate. Taken in the dose of from one-third of a grain in powdered sugar, this medicine, when it reaches a dose of six or eight grains, determines an abundant secretion of urine, and the dropsy rapidly disappears.

ART. 142.—*Case of Spina-bifida cured by excision.* By Dr. J. C. NORR, of Mobile.

This case possesses novelty sufficient to deserve republication.

CASE.—The subject of this case, aged one month, was a male, and the child of an Irishwoman; it presented, about the middle lumbar vertebra, a tumor an inch and a half in diameter, nearly circular, and elevated about three-quarters of an inch. The appearance of the tumor was unusual, and the first impression on

my mind was that of fungus hematodes; the summit was nearly flat, of a reddish chocolate color, and in the centre was a thin pellucid membrane of about three-fourths of an inch in extent, through which could be seen serous fluid. The most graphic description I can give of the appearance of the tumor is that it resembled a half ripe carbuncle with a Malaga grape buried in the centre; had it not been for this deficiency of skin in the centre I should have been much embarrassed to form a diagnosis. Guided by a case somewhat similar, though smaller, reported by Dr. Mott, of New York, in his Appendix to Velpeau, I determined to extirpate the entire mass. I accordingly, on the 15th of March, 1855, in the presence of Drs. J. Hamilton, Vetchum, and Anderson, and my student, Mr. Childs, inclosed the tumor by two elliptical incisions in the direction of the spine, and dissected it out completely; the tumor was found to consist simply of skin, cellular tissue, and the membranes of the spine distended with serum. After the sac was removed, an opening into the spinal canal was exposed about the size of the end of the finger, and a tablespoonful of fluid escaped.

It was then dressed by bringing the edges together by a single pin and twisted suture, and placing above and below strips of adhesive plaster.

The dressing was removed on the third day, and complete adhesion had taken place by first intention, except the portion included between the pin and ligature, which sloughed; this left a narrow, gaping ulcer immediately over the opening in the spine, and I felt some apprehension about the result. I did not reflect on the extreme vascularity and tenderness of the skin of a child a month old, and put too much stress on a single point; it would have been more scientific to have made a longitudinal cut on each side to free the skin, and to have used two pins instead of one. The case, however, did well; granulations were thrown out, and the ulcer soon closed, and at the end of two weeks the healing was perfect, and the parts firm and solid.

The child had no constitutional disturbance whatever; slept and nursed as usual. Two months have now passed, and the cure seems to be complete.

REPORTS
ON THE
PROGRESS OF THE MEDICAL SCIENCES.

July—December, 1855.

THE intention of the following Reports is to pass in review the principal additions to each department of Medical Science, which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful, will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report, to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge,—the alleviation of suffering and disease.

I.

REPORT ON PRACTICAL MEDICINE, ETC.

A Manual of the Practice of Medicine. By GEORGE HILARO BARLOW, M.D.,
Physician to Guy's Hospital. (Churchill, 12mo. 1855; pp. 706.)

THIS volume appears before the world in very good company—in company, that is to say, with the excellent Manuals which have made Mr. Churchill's name so familiar to the medical profession. It also emanates from a quarter which must command respect. It has been long expected, and it will, no doubt, be eagerly and extensively read. And so it ought to be. At the same time we cannot refrain from expressing a regret that a work, which is so sure of a large audience, and this a young audience, should not represent a little more correctly what we conceive to be the "feelings" of the profession at the present time. It dwells, indeed, too much upon the old bugbear of inflammation, and says too little of the various forms of degeneration; and it is to be feared that the student who makes this manual his sole text-book may be in danger of thinking that the diseases of the present day are more active than they really are, and so fall into the mistake of adopting a line of treatment of unnecessary severity. We regret to have to make this remark: at the same time we think a great part of this deficiency may be corrected on a future occasion.

It is not necessary to give a systematic analysis of a book of this kind, and all that we have to do is, announce its appearance, and give an illustration or two of its contents. As to the plan, this is based upon the etiology, or, as the author terms it, the natural history of disease.

The volume opens at the chapter on fever, and here we will find our illustrations. We select the remarks upon the pulse, and the use of wine.

"Few of the phenomena of fever are more interesting or more instructive than the state of the pulse; and it is by the indications which it affords, that we are enabled, more than by any other class of symptoms, to regulate our prognosis and our treatment. One of the effects of the poison being upon the blood, the mutual affinity between that fluid and the tissues is weakened, and one of the moving powers of the circulation annulled or diminished, and consequently we find the heart laboring to overcome the obstructed circulation; but in this instance we have not, in the ordinary fevers of this climate, the increased tonicity of the arteries which exists in inflammation, and consequently the pulse is sharp and full, but never, except in inflammatory fever, hard. As the fever continues, the powers of the system, and consequently the contractility of the heart, failing, we have the pulse weaker and weaker, and at the same time as soft as at first, or even more so, from the diminishing tonicity of the arterial coats. Owing to the continued efforts of the heart, and the persistent obstruction in the capillary circulation, there is not uncommonly a recoil to be felt, giving the sensation to the finger of a back stroke. Another effect of the continuation of the obstruction to the extreme circulation, conjoined with the continually diminishing power of the heart, is, that the latter being unable to empty itself, and therefore continually exposed to the presence of its natural stimulus, is incessantly excited to contraction, the effect of which is great frequency of the pulse, which is often commensurate with its debility. With this state of the heart there may be a

tendency to the back stroke, and the result will be a kind of struggling or throbbing pulse, which is always a sign of imminent danger.

"When there is a subsidence of the fever, whether brought about or followed by anything like a critical discharge, or otherwise,—though it is to be observed that there is always a return of the secretions on its subsidence,—the healthy relations between the blood and the tissues gradually returning, the obstruction to the current is in some measure diminished; and therefore the pulse loses its sharpness, and the ventricles of the heart being better able to expel their blood, it becomes also slower: but the diminished contractility of the arteries continuing, with the generally exhausted state of the system, the pulse is soft and moderately full: and as the convalescence becomes established, and the secretions abundant, the quantity of the blood in the system being probably diminished, the left ventricle empties itself fully, but is slowly refilled. The force of its contraction no doubt remains somewhat weakened, but the same is the case with the contractility of the arteries, so that they are equally balanced, and the result is a slow, very distinct, and moderately soft and full pulse. It may be well here to remark that the conditions of pulse which have been here somewhat theoretically referred to the different periods of fever, are fully borne out by experience; a quick and feeble pulse being that always met with in the advanced stages of continued fever, the pulse of convalescence being distinct and slow (sometimes below the healthy standard) and moderately soft and full.

"Upon these grounds, but still more upon almost universal experience, the frequency of the pulse is of the greatest importance in fever; its not exceeding 100 is in general a favorable sign, when it exceeds 120 in adults the danger is great."

* * * * *

"Now as wine is a direct stimulant to the heart and large vessels, and has but little influence over the extreme circulation except through the heart, it is certainly highly desirable to delay its use until the tendency to capillary obstruction has passed away; or, in other words, until the fever itself has subsided, which will generally be shown by the pulse becoming slower and fuller, but at the same time soft and very compressible. When this is the case, although the tongue may be brown, the patient almost unconscious, and in the most abject state of prostration, we may confidently expect the greatest benefit from wine freely administered. It is not always that the indications for its use are so clear, as in the worst cases we often find the central moving powers of the circulation to be sinking, whilst the febrile state and the consequent difficulty of the extreme circulation continue: under these perplexing circumstances, we must be guided by other conditions as well as by the pulse. Thus, in cases where wine is most required, the patient generally lies prostrate upon his back and sinking lower and lower in his bed, the countenance is sunken, the eyes hollow, the surface is inclined to cold at the extremities, though it may be hot about the trunk. If, however, this heat is attended with dampness we may with more confidence administer wine. The state of the pupils will often aid us, for in general, stimulants are better borne with a full than a contracted pupil. The tongue in such cases will generally be brown from a crust of sordes, which also covers the teeth and gums. The state of pulse which affords the most certain indication for the use of wine has just been described, but as in the worst forms of fever we must not wait for that which may never show itself, we must consider feebleness and compressibility as themselves indications for the use of wine, provided the other signs of prostration are likewise present.

"A rule has been proposed by Dr. Stokes which is certainly worth attending to, though it may not be at all times applicable; namely, that when the first sound of the heart is nearly lost and becomes much more feeble than the second, wine is indicated. It will not be safe in all cases to wait for this symptom, but certainly where it does occur, it is in general a sign that stimulants are required. As regards the quantity of wine to be given, it is impossible to lay down definite rules, as it must be given according to its effects rather than by measure. Where the signs of sinking are not very urgent we may begin with an ounce of sound port or sherry, which may be diluted with an equal quantity of water, and given about four times in the twenty-four hours, or even a less quantity may be

given at shorter intervals. It will always be necessary to watch most carefully the effect of the wine, and if it cause increased heat of the head or active delirium, or if the tongue become drier under its use, or the pulse more frequent and sharper, without any increase of volume, it must be withdrawn: but, if the tongue become moister or the pulse less frequent or fuller, and especially if the patient should get some sleep or appear more tranquil, even though the depression become more alarming, its use must be continued and the quantity increased, and this must be done without limit as long as the prostration continues, or the pulse appears to become more feeble. Sometimes ten, twelve, or more ounces must be given in the day, and in cases of extreme prostration, brandy and also ether must be given in addition; but such are almost desperate, though certainly where there has been a slow and compressible pulse, patients have sometimes been saved by the timely administration of the strongest stimulants."

We leave these passages to convey the favorable impression which they are well calculated to convey, merely adding that the whole book is eminently practical and plain, and that the most careless reader can have no difficulty in learning its lessons and carrying out its instructions.

Report on all the cases of Fever which occurred in Guy's Hospital during the year 1854, with Remarks having especial reference to the Typhus and Typhoid distinctions. By SAMUEL WILKS, M.D. (Guy's Hospital Reports, 1855.)

The question which at present excites most interest in connection with fever, is the identity or non-identity of typhus and typhoid fever. This question is, no doubt, set at rest in the minds of many. It is set at rest in our own mind, and we fully agree with Dr. Jenner in thinking that typhus and typhoid are different affections. But this is not the case with all, and therefore we are glad to have the additional evidence which is contained in the present report.

This evidence, then, consists of the notes of no less than 187 cases. It is clear and conclusive; and, after reading it, it is scarcely possible that any unprejudiced person should continue to believe in the identity of these two forms of fever. We cannot give the cases; we can only give some of the comments upon them.

"It will be seen," says Dr. Wilks, "that two very different rashes are described, and that these have occurred in various degrees of intensity, and that they have sometimes been altogether absent. In the latter cases, it will be observed, however, that with the exception of the eruption, the symptoms in every respect followed a particular type. Regarding, first of all, the cases which had the rashes, it will be seen that those in which the rose eruption existed had, without exception, diarrhœa as well as other symptoms of intestinal disease, and, in fact, they were all well-marked cases of typhoid fever. Those with a mulberry rash had for the most part a comparatively healthy state of bowels, although it is mentioned that diarrhœa occurred in one or two instances, but the importance of this symptom we shall presently discuss. As regards the relation of the degree of the virulence of the fever to the amount of the rash, there is not much to be learned, as it will be seen that the violence of the former, and the degree of the intensity of the latter, bore no exact proportion to each other; although it is true that the mildest cases had no rash, and that in the most severe it was generally present, and also that no fatal case in the above list occurred when it was altogether wanting. (I have seen typhoid fever fatal, however, without any eruption, although I have never witnessed this occurrence in typhus.) The rash argues, therefore, a certain amount of intensity of the fever, but is not proportionate to it. Its presence in all the fatal cases proves so much. Eliminating, however, the extreme instances, and regarding only the majority of the ordinary cases, we cannot say that the amount of the rash, and the severity of the disease, as shown by other symptoms, were proportionate. It will be seen that in some cases, as No. 73, where the mulberry rash was well developed, the symptoms were, comparatively speaking, mild, and the patient recovered without the administration of any stimulant. On the other hand, No. 90 is an example of a man who had no eruption, and yet who narrowly escaped death. The same remarks hold good of the rose rash. I have more than once seen out-patients present themselves at the hospital with fever, in whom a rose rash existed, and the accom-

panying symptoms were of the mildest form. In case 144, if the eruption had not been present, the existence of fever would hardly have been determined; and the patient was so little ill, that his principal trouble was the order for keeping his bed. It is clear, then, that there are other causes besides the mere virulence of the disease, which determine the presence and amount of the eruption, and I am inclined to think that these depend upon accidental causes, as some peculiar idiosyncrasy of the patient, which predisposes him to affections of the skin, or upon some condition of the integument itself, which makes it more liable to assume a morbid state in one person than another—in the same way as some are more prone to have pulmonic, and others to have cerebral complication when attacked with fever. I would be understood to say, that the presence and peculiar character of the rash is primarily determined by the specific agency in operation, and that, to a certain extent, the more powerful that agency the greater is the tendency to the skin affection, as evidenced by its existence in fatal cases, but that after the peculiar rash has been so produced, the fact that it does not vary in intensity with that of the fever, proves that some other conditions are present to influence its development, and these, I cannot but think, are mostly accidental, and due to the nature of the skin itself, or some such secondary cause. In the analogous instance of scarlatina, we see the mildest and the worst cases where little or no eruption exists, so that no relation can be determined between the virulence of the disease and the amount of the rash.

“Now with reference to the two varieties of eruption,—the typhus and the typhoid,—there is, as a rule, a marked difference between them. The clear skin with the pink spots scattered over it in the latter, and the mottled skin of the former, are generally sufficiently distinct. How the two can be confounded, in the majority of instances, I cannot well imagine, and yet some writers at the present time have not perceived a difference. I think this must arise from a want of extensive observation, for no doubt occasionally, in particular instances, great difficulties do arise. Thus, sometimes we see patients exceedingly low, the whole surface of the skin dusky, perhaps also very dirty, and covered with fleabites; and, in addition, numerous acne and other pimples; and amongst all this is to be observed a recent rash, which fades on pressure. In some such cases I have found it almost impossible to say whether these were the rose spots of typhoid, or the larger marks of the mulberry of typhus. Such instances have appeared to favor the opinion that no distinction existed between them; that the two rashes were mere modifications of one another; or, if distinct, that they could occur at the same time, and consequently, that the two forms of fever were undistinguishable. If the rash alone were to determine the whole question of the generic differences of fever, such cases would no doubt often warrant such a conclusion; but the whole history of the case must be taken to discover its nature. For example, No. 127 was that of a woman, who, on entering the hospital, was too ill to give any account of herself. The whole body was covered with spots, ill defined, and the skin was dusky, and it was difficult to say to which kind the eruption belonged. Thus she remained two days, when the cheeks became flushed, the bowels very loose, and a friend who now arrived stated the duration of the illness, and the previous existence of diarrhœa. At the same time the spots became more characteristic, and the case run a uniform one of typhoid. In this instance, with the absence of history, and no very marked symptoms, the eruption would altogether have failed to determine the nature of the case at the time of admission. In its subsequent course, however, as well as in its previous history, it showed itself to be one of ordinary typhoid, and, therefore, teaches us that the obscurity of the rash alone cannot warrant us in the assertion that typhus and typhoid are inextricably united. In two other instances, also, there was a difference of opinion among good observers as to which kind the rash was to be referred. These are, however, exceptional cases, for in the majority it must be affirmed that the two eruptions are well marked, are characteristic, and cannot be confounded. It has been farther questioned, even allowing the existence of a general distinction between them, whether they constitute more than varieties of each other, dependent upon secondary circumstances, and whether the two may not in some instances be combined. In such cases as I have just mentioned, it would be difficult to answer such a query posi-

tively or negatively; for amongst a thick typhoid rash it would be impossible to say that some spots did not remain during the whole time of the fever, and so far resemble the larger ones of the typhus eruption, or that in some cases of typhus rash a few rose spots were not present for a time, and then disappeared. There is no proof, however, that such cases, although surmised, do ever occur. The general fact still remains, that a well-marked rose rash belongs to fever having peculiar symptoms, and that an equally well-marked mulberry rash belongs to another variety of fever, having its symptoms, one of the most striking of which is (as the above list shows) the diarrhœa and diseased intestine in the former, and the perfectly healthy intestine, in those who were examined after death, in the latter. With regard to the duration of the eruption in each variety, it was found that the mulberry rash persisted throughout the disease, and that the rose rash constantly faded and reappeared in a succession of crops. I think Dr. Jenner mentioned four days as the duration of a single macule, and I believe the spots usually begin to disappear about this time, but I have found it not unusual for them to remain six or seven days. There are two other facts worthy of remembrance in the history of the rose rash: the one is, the occasional reappearance of the eruption during a relapse, and the other has reference to a difficulty which sometimes occurs in judging of the nature of the rash which is about to appear at the onset of the fever: for, previous to the development of the perfect form, a general pink efflorescence of the skin may exist, and be easily mistaken for the incipient stage of the mulberry rash. In conclusion, then, we must say, with respect to the eruptions, that two well-marked varieties characterize two forms of fever, but that in some exceptional cases they are for a time with difficulty distinguishable."

Afterwards, Dr. Wilks speaks of that condition of the intestine which constitutes the main distinction between the fevers in question.

"We have seen that in all those cases where the rose rash existed, diarrhœa was also present, besides the other well-known symptoms of intestinal disease, —as the full doughy abdomen, the flushed cheek, the red tongue, &c. It will be seen, also, that diarrhœa is mentioned as having occurred in some cases where the mulberry rash existed; but it must also be observed, at the same time, that no concomitant symptoms of bowel affection were present, and that in the fatal cases, with this eruption, there never was the slightest morbid appearance found in the ileum. In perusing the cases of typhus where diarrhœa is mentioned, the observations which I made in my preliminary remarks must be remembered, that a loose evacuation is often to be anticipated at the termination of the fever, for I related cases where this had occurred, and no disease of the intestine had been found, and stated that, as a rule, on the post-mortem table, we see the contents of the bowels in typhus fever to be fluid. Whether the evacuation occurs as a crisis, I will not undertake to say; but I can state that it is by no means uncommon at the expiration of the fever, and when the mulberry rash is fading, for one or two large liquid fecal evacuations to take place. This symptom cannot, and ought not, then, to be constituted into a diarrhœa, much less to be taken as evidence of a diseased bowel. Notwithstanding, as I have myself witnessed, a difficulty has arisen with respect to this symptom when a patient has been seen during its occurrence for the first time. In two cases of typhus in my list, diarrhœa is said to exist at the commencement of the disease; but as both patients had taken aperient medicine before admission, the symptoms might justly be attributed to this fact. If, however, a little diarrhœa did take place occasionally in a case of typhus, it is no more than might be expected with such a condition of fluids as is supposed to exist in this disease, for its occurrence, we know, is very common in pyæmia and analogous affections, where the blood is in a dyscrasic state. In such diseases we do not look to this symptom alone as evidence of a diseased bowel, unless it be constant, and other reasons for suspecting its existence be present; but rather we consider it as one of the means which nature employs to carry off the poisonous matter from the blood. We must say, then, that a patient with typhus having occasionally a loose evacuation, presents a symptom which might be expected, and cannot be taken as any evidence of a diseased bowel. As a rule, however, it seldom occurs during the progress of fever, but not unfrequently at the close; and in most cases after

death the intestinal contents are found fluid. In the 64th case, of a man who had typhus, and no diarrhœa, the intestine was found full of liquid fecal matter; and therefore, if this man had lived but a short time longer, he must have had a large liquid evacuation. Some years ago I witnessed the following case: A woman, æt. 48, was very ill with typhus fever, and covered with a mulberry rash, of which some of the spots at the end of a fortnight had become petechial. A castor-oil injection was then administered, a copious fluid evacuation followed, and continued until death, a few hours afterwards. This was apparently a case of typhus, dying of diarrhœa. The intestine, however, was found quite healthy. How far the treatment produced an over-action of the bowel, which increased the exhaustion and assisted in killing the patient, is questionable."

The cases related in this report also show very clearly the very marked difference which there is in the natural history of these two fevers; and this difference is well put by Dr. Wilks, together with some practical bearings of the difference, which we cannot refrain from quoting.

"If, as we shall find, these forms of disease pursue a certain definite course of their own, it is evident it must be of the very highest importance to have an accurate knowledge of their duration, and, therefore, in any individual case about which we may be consulted, it will be our first duty to ascertain the exact date of the illness; for not only will this knowledge be necessary to form a prognosis, but upon it will depend in great measure the success of the treatment. In looking at the cases of typhus, it will be seen that on the third or fourth day of the disease, the patient is exceedingly ill; his nervous and muscular powers are quite prostrated; he is, perhaps, delirious; and at that early period his skin is covered with a rash. Now, in cases of typhoid, the early progress of the case is much slower. The patient, whom we may suppose to be taken ill at the same time as the typhus one, is still at his employment, while the latter is ill in bed, and does not seek admission until about the tenth day. He is then becoming very ill, and a rash is appearing. If he present himself earlier, as at the end of seven days, he walks to the hospital, and no appearance of eruption has yet been discovered; he still preserves his intelligence, and is able to give a complete history of his symptoms. These, at the onset, are insidious, as they are often at first not more urgent than those which attach themselves to a common cold,—a shivering, loss of appetite, slight headache, &c.,—sometimes an epistaxis. In typhus, on the other hand, the symptoms are at an early period of a much more violent character, the headache is often intense, and the depression very great, with an extreme aching of the limbs. The same rapidity of symptoms characterizes typhus throughout its subsequent career: the subject of it being exceedingly ill on the fourth day, sinks lower and lower until between the twelfth and fourteenth day, when he begins to improve. The time of duration of the disease in all probability is uniform, but the want of exactness met with in this respect is due to the difficulty of ascertaining accurately the first onset of the symptoms. As a rule, the fever comes to an end on the thirteenth or fourteenth day. The typhoid, on the other hand, runs a much longer course. The patient with this disease is ill at least three weeks before any sign of recovery takes place, &c. The time of this occurrence is not so definite as in typhus, and which want of precision is due to the same cause—the difficulty of ascertaining the particular day on which the symptoms commenced. It is never until the expiration of three weeks, however, that a change is observed, and this is generally seen to happen on some day during the fourth week. As I before said, I was hardly prepared for this uniformity in the course of the disease; but it affords an explanation of a fact which is constantly heard spoken of in reference to fever—the rapid progress of a case under one treatment, and the lingering nature of the illness under another. It will be seen by an observation of the above cases, that whether the patients entered the hospital early or late, the disease ran a certain course. Those which came in towards the close of the fever soon got better, and those which came in early, daily got worse, and this was seen to occur under all kinds of treatment. Some simply had salines administered, some had tonics, and others stimulants from the beginning, but it was all the same, nothing stayed the progress of the disease. I exclude in this statement the plan of Dr. Dundas, by large doses of quinine, of

which I have little or no experience; and of course, in speaking of the duration of fever, I do not refer to the subsequent effects of the disease—as pulmonary or abdominal phthisis, &c.—which may delay the ulterior recovery to an indefinite period.”

This report does not throw much light upon one point,—and that is, as to whether typhus and typhoid are ever intercommunicable; nor was this to be expected in hospital practice. There was not a tittle of evidence, however, in favor of intercommunicability. The post-mortem disclosures present no novelty. They agree fully with those already known.

In a word, the evidence contained in the report is irresistible; and Dr. Wilks is quite warranted in saying, as he does say,—

“I say, then, as regards the typhus and typhoid genera, that in the majority of instances the two are plainly distinguishable, and that in the few cases in which some doubt may arise, on account of the obscurity of a rash or some other symptom, a light will subsequently be thrown upon them by the completion of the history, and it will then be clearly seen to which type they belong; and if there be yet one or two cases (in any given period) concerning which an obscurity hangs throughout the whole duration of the illness, they will probably be fewer in number than those instances in which an equal doubt may exist as to the presence of fever or a local inflammatory disease of the head or chest. From such exceptional cases, therefore, it were no more just to confound the two species, than to say fever, pneumonia, and arachnitis were identical, because in some few instances it were not possible to distinguish these latter apart. I believe, then, myself, that the connection between the two kinds of fever is no greater than exists between many other forms of disease; but the greater tendency to confound them has been owing to the want of a correct knowledge of their history, as well as to the non-recognition of some particular and important symptoms attending them.”

Hypnotism in Hysterical Paralysis. By JAMES BRAID, Esq., of Manchester.
 (“Association Medical Journal,” Sept. 14, 1855.)

We would wish to direct especial attention to the facts and arguments contained in this article, for, as we take it, the arguments are as sound as the facts remarkable. What *hypnotism* is, or wherein it differs from mesmerism, we shall leave Mr. Braid to tell us in his own words, for we can add nothing to the clearness of his description.

“It is no doubt known to many,” he says, “that in 1841 I entered upon the experimental investigation of the phenomena of mesmerism. I did so as a decided sceptic in every respect, resolved, if possible, to discover and expose the trick by which certain phenomena then being exhibited in Manchester, were accomplished. I very soon discovered, however, that there was a certain amount of truth, mixed up with what I believed to be error; and I therefore resolved to attempt to separate the former from the latter.

“I was soon enabled to demonstrate that, by certain processes, some individuals were able, by their own unaided efforts, to throw themselves into an analogous state with those who were subjected to the mesmerising processes. The most speedy and certain mode for accomplishing this was causing the subject to maintain a steady fixed gaze at any inanimate object, placed a little above the forehead, but so as to be seen distinctly by both eyes; the subject at the same time concentrating his undivided attention upon said unexciting act. This was at once a most important step, as it proved the influence to be *subjective*, or a personal influence existing within the patient's own body, and not depending upon any influence *ab extra*, proceeding from the body of another human being. This inference was still farther supported by the fact that the varied nature and quality of the object gazed at seemed in no way materially to alter the subsequent results; whilst, in highly impressible subjects, it was proved that the results depended so much upon the expectant idea in the mind of the subject, that any physical combination of circumstances whatever to which they were told to direct their attention, with the assurance that they would be thereby sent to sleep, was followed by sleep; whilst the next moment they might

comply with the same directions without going to sleep at all, if persuaded by the suggestion of a second party, or by a pre-existing idea in his mind to the effect that now the agency was to be inoperative, from some supposed change in the existing circumstances. It was moreover ascertained that, with some very susceptible subjects, the mere idea and belief that some particular process was going on at a distance, to send them to sleep, was sufficient to produce such result, even when no such process was taking place: and farther, in reference to the alleged power of the will of the operator to affect subjects, either near at hand or at a distance, after having carefully investigated the subject, I am warranted to state, as the result of my experience, that I have never found any influence whatever to be exerted over the patient by my *silent willing*; but they seemed very quick to catch suggestions from the manners, looks, tones of voice, or physical manipulations of the operator; and to become affected according to the purport of what they *inferred* to be the *will and intention* of the operator, and that even when he might be *willing the very reverse*. In short, my experience went to prove that the real efficient agency of all the different processes was merely as aids to assist the patient to induce in himself a state of mental abstraction or fixity of attention, in which the powers of his mind should be so absorbed by a fixed idea or given train of thought as, for the nonce, to render him dead or indifferent to all other considerations and influences which did not harmonise with the dominant idea in his (the patient's) mind at the time.

"As a very strong corroboration of the correctness of this view of the subject, I may state the fact that, from the difficulty of fixing the attention of idiots, all my attempts to hypnotise them have been unsuccessful, notwithstanding I have made many persevering efforts to do so.

"Again, in my experimental inquiry into *The Power of the Mind over the Body*, which was published in 1846, as the result of a laborious set of experiments, I was enabled to demonstrate that a sustained act of attention, directed to any part of the body, was followed in a few minutes by a change or modification in the physical function of the organ or part so regarded; the general result being an exaltation of function; but, curiously enough, with many individuals the very reverse result might ensue, from a dominant idea to that effect having existed in the mind of the patient previously, or from its being strongly imprinted on his mind at the moment by an audible suggestion from another person, in whose prediction he could repose confidence. The more vivid the imagination and fixed the attention of the subject to the expected result, the more certainly and vividly were the phenomena realized; and, after the processes for inducing what I call the hypnotic state, it was found that these physical phenomena could be produced, through the mental influences of the subjects, with far more certainty, celerity, and intensity, than in the ordinary waking condition. I therefore adopted the term *hypnotism*, or *nervous sleep*, to designate this peculiar condition of the nervous system, into which it could be thrown by artificial contrivance, and which differed in several respects from common sleep, as well as from the ordinary waking condition. In fact, *hypnotism* comprises, not one state, but rather a series of stages or conditions, varying in every conceivable degree, from the slightest reverie, with high exaltation of the function called into action, on the one hand, to intense nervous coma, with entire abolition of consciousness and voluntary power, on the other; whilst, from the latter condition, by very simple but appropriate means, the patient is capable of being speedily partially restored, or entirely roused to the waking condition. By this means, I maintain that the operator does not communicate any surcharge of a magnetic, odyllic, electric, or vital fluid or force, from his own body to that of the patient, as the real and efficient cause of the phenomena which follow, in altering or modifying physical action, or curing disease; but I hold that he acts merely as the engineer, by various modes, exciting, controlling, and directing the *vital forces within the patient's own body*, according to the laws which regulate the reciprocal action of mind and matter upon each other in the present state of our existence."

Mr. Braid enters more fully into this part of his subject, and suggests several new terms, but we have said enough to make the cases intelligible which we are about to relate, and this is our sole purpose at present. These cases comprise four of hysterical spasm or paralysis (of which we take two), and one of

impaired vision, also no doubt of an hysterical character. These cases we leave to tell their own story, merely premising that Mr. Braid does not always depend upon hypnotism, to the exclusion of the ordinary modes of treatment.

CASE 17.—In the spring of 1842, a girl was brought to me, under the following circumstances. She had been suddenly seized with violent tonic spasm of the hand and arm, so that her hand was rigidly clinched, the wrist flexed on the arm, and the arm flexed on the humerus, attended with considerable pain. Most of the servants, male as well as female, in a large hotel, had exerted their utmost strength without being able to open the hand or extend the arm. A highly respectable surgeon was now sent for, who prescribed medicine internally, and the application of a large blister on the nape of the neck. There being an aggravation of symptoms, I was consulted, when I immediately recognized this as an hysterical case, for which I hypnotized her, and then, by gently titillating the skin along the course of the extensor muscles, they were immediately called into action, and the morbid action of the flexors at the same time withdrawn, by which simple means, by art, and without the slightest effort, I was enabled, in a few minutes, to effect what had resisted the strongest efforts of powerful men to accomplish; for the hand was opened, and the wrist and arm extended, and the patient cured in a few minutes; and she never had any subsequent attack of the sort.

CASE 19.—On the 11th of August, 1853, a young lady, 23 years of age, was sent to me from Berwick-upon-Tweed, by Dr. Johnston, of that city. The following is the history of this very interesting case. Four years previously, she had been seized with a paralytic dragging of the left leg, which became worse and worse, notwithstanding the most assiduous efforts of Dr. Johnston, who is a most experienced and scientific physician, aided by the opinion and advice of Sir B. Brodie, who had been corresponded with on the case by Dr. Johnston. Four months having elapsed without improvement, she was taken to Edinburgh, for a consultation with Professor Syme, who examined her spine with great care, said he found no disease there, and hoped she would recover ultimately, also several years might elapse before such event took place; and that he could only in the meantime, recommend attention to her general health, with exercise in the open air, by riding on a donkey. This was persevered in for ten months more, without the slightest improvement, when the patient was taken to London, to have the benefit of the personal examination and advice of Sir B. Brodie. Still no improvement ensued for months, and at length all treatment was abandoned. After this patient had been in this condition for twenty months, and after all treatment had been abandoned as quite inefficacious in her case, she at length gradually recovered the use of her limbs. From that period she had occasional threatenings of a return of her old complaint; and, in the summer of 1852, she frequently felt as if her legs were being galvanized. In February 1853, she had a return of her paralytic affection, which continued for a fortnight; and, at the end of April 1853, she had another seizure, which had obstinately resisted all the best directed efforts of her old and tried friend, Dr. Johnston, for four months, when he sent her to me, to try the effect of hypnotism; which he had been induced to do from having read some remarks on the subject contained in my paper on "Hypnotic Therapeutics," published in the July number of the *Monthly Journal of Medical Science*, for 1853. The following is the passage which impressed Dr. Johnston with the belief that hypnotism would be the remedy for his patient; and he immediately recommended it to the parents, and wrote to me accordingly, and sent his patient hither.

"The most striking cases of all, however, for illustrating the value of the hypnotic mode of treatment, are cases of hysterical paralysis, in which, without organic lesion, the patient may have remained for a considerable length of time perfectly powerless of a part or of the whole of the body, from a dominant idea which has paralyzed or misdirected his volition. In such cases by altering the circulation, and breaking down the previous idea, and substituting a salutary idea of vigor and self-confidence in its place (which can be done by audible suggestions, addressed to the patient in a confident tone of voice, as to what *must* and *shall* be realized by the processes he has been subjected to), on being

aroused, in a few minutes thereafter, with such dominant ideas in their minds, to the astonishment of themselves as well as of others, the patients are found to have acquired vigor and voluntary power over their hitherto paralyzed limbs, as if by a magical spell or witchcraft. Assuredly such cures are as important as they are interesting and surprising, because such cases may resist ordinary modes of treatment for paralysis for an indefinite length of time; but still the *rationale* is simple enough, when viewed according to the principles which I have already explained, of the influence of an expectant dominant idea, *either exciting or depressing natural function, according to the faith and confidence of the patient.*"

On the 11th of August, the above patient called on me, accompanied by her mother. The patient was a tall, handsome, and intelligent young lady, twenty-three years of age, five feet eight inches high, with figure well proportioned to her stature, so that when seated she had all the appearance of youth and vigor. When she attempted to walk, however, her paralytic condition of the left leg was very obvious, as she could only drag it along the floor at each step as far as the heel of the other foot, with the toes of the affected limb turned outwards. I had no difficulty in recognizing the nature of the case; so that I at once assured both mother and daughter that I would make very short work of that case. The mother said she would be glad if it turned out so; but she uttered this in a tone of voice which indicated that she was by no means equally sanguine on the point as I was. Having seated the patient in an easy chair, I hypnotised her, and extended her limbs, and acted on them so as to change the previously existing state of the muscles. In about ten minutes I aroused her, and requested her to walk across the room, which she was enabled to do, lifting the left foot from the floor, and carrying it forward before the other in the usual way; which she had not been able to do for months previously. The improvement, although she was still a little lame, seemed greatly to surprise both mother and daughter; more especially, from the apparent simplicity of the means by which it had been accomplished. Next morning I repeated the operation, with still further improvement; and on the evening of the same day I operated again, after which she could walk up and down and around the room without the slightest appearance of lameness; and after a fourth operation, next morning, she could walk with the grace of a queen, or the agility of a sylph. Immediately after this operation, she rode to town, and there walked about through various shops and streets, as if she had never been lame at all. As the muscles of the other leg had also been somewhat affected, I recommended the patient to remain under treatment about a month, the more effectually to consolidate the cure; after which she returned home quite strong and active, and she remained so for twelve months.

During the summer of 1854, this patient had been so vigorous as to be able to climb the hills in the Highlands of Scotland as actively as her companions; but, during the autumn, from fatigue with a round of company, and anxiety about the health of a friend, her general health broke down; and, at the end of September, she had another paralytic seizure. As it had persisted for three weeks, she was brought to me once more; the mother of the patient expressing her fears, however, that I would not find hypnotism so successful as before, as her general health was so broken down on the present occasion. They arrived in Manchester at eight o'clock in the evening; and, as soon as they had had some refreshment, I told them that I intended to make the patient walk without lameness *before she went to bed*. The mother of the patient was quite incredulous; but I hypnotised, and acted as on the former occasion; and, in a quarter of an hour, the paralysis was quite gone, the patient walking without the slightest degree of lameness. After being hypnotised again next morning, she felt as vigorous as before the attack; and all the constitutional ailments her mother had been so anxious about speedily disappeared also under hypnotism, and the patient has kept quite well ever since.

CASE 21.—On the 19th of June, 1854, I was consulted on the case of Miss R. Twelve months previously, she had had an attack of ophthalmia, which yielded to treatment so far that she was able to go out of doors in a month. She now had the misfortune to sustain a blow, from a pole falling upon the upper and left

side of her head. Two or three days subsequent to this accident, she suffered severe pain from the blow, when suddenly she became quite blind of the eye on the same side, with dilatation of the pupil. For this affection her medical attendant again subjected her to a course of treatment; and the result was, that in four months sight was partially restored to this eye. At the beginning of January, 1854, whilst reading the newspaper, this patient suddenly lost sight entirely of the other eye, with dilatation of its pupil, as had been the case previously with the other eye. Another surgeon was now consulted in the case; and a few days thereafter, whilst rising from the stooping posture near the fireplace, the patient had the misfortune to strike the same part of the head against the mantel-shelf which had sustained the former injury from the falling of the pole, which blow against the mantel-shelf was immediately followed by a total loss of sight of the corresponding eye; and thus she required to be led about in a state of total blindness in both eyes. After treating the case for some time himself, the gentleman now in attendance, from a consideration of the obstinacy and importance of the case, recommended her to go to Dublin and place herself under the care of Mr. Wilde, a celebrated oculist in that city. This was complied with, and she remained under the care of Mr. Wilde for six weeks, during which period she went through a course of very active treatment, with decided improvement; for the iris had become somewhat irritable on the application of light, and she was able to discern large objects, but could neither see to read nor write. She now returned home, where the same line of treatment was persevered with, under the supervision of the surgeon who sent her to Mr. Wilde. After she had been at home for some time, and finding the improvement had become stationary, this gentleman recommended her to try hypnotism, and furnished her with a letter of introduction to me, detailing the history of her case. On examination, I found no apparent physical imperfection to account for the impaired vision; nor was there any pain about the head or eyes. The eyes had very much the appearance of an incipient case of amaurosis, only the pupils were not quite so much dilated. I suspected that the cause of the impaired vision was a want of sufficient nervous irritability in the retina, and, if so, that hypnotism would very soon relieve her. My first object was to apply a test by which I might be enabled to ascertain what amount of benefit had resulted from my processes. On presenting the title-page of a book to her, with the largest and boldest letters in my room, I found she could not discern a single letter, notwithstanding there were some letters a quarter of an inch long, and very bold open print. Having hypnotised the patient and directed the nervous power to the eyes, by wafting over them, and gently touching them occasionally, so as to keep up a sustained act of attention of the patient's mind to her eyes and the function of vision, she was aroused in about ten minutes. I now presented before her the title-page of the same book, when she instantly exclaimed, with delight and surprise, "I see the word commerce!" pointing to it. I told her she would see more than that presently; and in a little while she exclaimed, "I see commercial," then "I see dictionary;" and shortly after, "I see McCulloch," the name of the author; but she could see nothing more. I told her that after a little rest, I felt assured she would see still smaller print, and, after a few minutes, she was able to read "London, Longman, Green, and Longmans." Such was the result of my first process. After a second hypnotic operation, next day, the patient could read, when first aroused, the whole of the title page of a pamphlet: and, in about five minutes after, she could read two lines of the text. After another operation, the same day, she could read the small close print in the appendix; and was able the same evening, to write a letter home reporting progress, for the first time for twelve months. She only required two more hypnotic operations, when she was found able to read the smallest sized print in a newspaper; after which she left me, quite cured, and, as I have heard, she has continued well ever since.

Considerations respecting Paralysis of the Sympathetic.

By J. HANDFIELD JONES, M. B., F. R. S. ("Lancet," 21st and 28th July, 1855.)

The principal object of the writer of these papers, and that with which we are here concerned, is to apply some recent experiments of M. Claude Bernard upon the sympathetic to the interpretation of certain obscure forms of vascular congestion. These experiments, in the author's opinion, suggest the idea, that these forms of congestion may be the consequence of paralysis of the sympathetic; and this the more, because this symptom in many cases has been found to subside under the administration of nervine tonics. In this opinion we are quite disposed to agree. Indeed, we think that Dr. Jones has very happily brought the light of true physiology to the elucidation of a very important and very obscure point in pathology.

It is not necessary to recapitulate the results of M. Bernard's experiments,—for these are well known,—but it may be well to mention Dr. Jones's individual experience in the matter. On repeating these experiments on a cat, then, the results arrived at agreed almost to the letter with the result arrived at by the French physiologist. "The temperature of the left ear (the side operated on) immediately after the operation was 93° Fahr.; of the right 91·5°. The next morning the sound ear was 86°; the left, 97·5°. There was a mucous secretion from the inner canthus of the left eye, but the conjunctiva was not much injected; the left pupil was contracted much more than the other. On the right side, close to the axilla at the root of the neck, the temperature was 97°; on the left, at the corresponding spot, 96°. For the next four or five days there was considerable conjunctivitis, with copious muco-purulent discharge, but after this date the conjunctival inflammation and mucous secretion diminished considerably. At the present date,—i. e., sixteen days after the operation,—the left ear is 15° higher than the right; there are red vessels in it distinct to the naked eye; the conjunctivitis has almost entirely subsided, but the fold of mucous membrane at the inner canthus is very prominent. The pupil is much contracted. She takes food well now, which was not the case for the first five or six days after the operation. I should mention that before dividing the nerves in the neck I endeavored to divide those going to the left kidney, but failed to do this satisfactorily. The shock and depression of a severe double operation would naturally induce a state of debility, which, as Bernard states, promotes the occurrence of conjunctival inflammation. In my experiment, the hyperæmia of the ear has certainly been a very constant and noticeable phenomenon; it has not as yet appeared to decline at all. It is a very interesting fact, stated by Bernard, and conformable to what might have been anticipated, that galvanizing the upper end of the divided sympathetic causes the disappearance of the phenomena produced by its division, and not only so, but actually the development of the converse state. Thus the contracted pupil becomes wider than natural, the depressed eye projects, the hyperæmic parts become pale, and the temperature sinks below the normal figure. What would not have been expected, is, that the ear of the sound side, during the application of the galvanic stimulus, rises in temperature almost as much as the other had done after the division of the sympathetic. The same may be said of the results observed during the administration of chloroform; when anæsthesia was complete, the ear of the operated side became cold and pale, while the other became more hot and injected. This alternation of phenomena seems to indicate something like an association in action of the two sympathetic cords, as if the throwing of one into an unusual state caused an opposite state of the other. It seems natural to suppose that the elevation of the temperature, coinciding as it does with hyperæmia of the part, stands to the latter in the relation of effect to cause; that, in fact, the part is hotter because it contains more blood. Bernard, however, opposes this view, because the temperature does not vary when the hyperæmia declines; because hyperæmia occurs when the fifth nerve is divided, but is attended with a diminished temperature; because ligature of the veins of each ear, and consequent gorging of the vessels with blood, lowers the temperature of the parts, which again rises on the side on which the sympathetic is subsequently divided. It is true that if the carotid is tied, and the sympathetic afterwards divided on the same side, no calorification takes place; but,

if the sympathetic be first divided, and calorification have come on, ligature of the carotid does not lower the temperature to that of the sound side. Much yet remains to be made out before a full explanation can be given of the various phenomena just mentioned, even supposing that they are all found to be of constant occurrence; but for the present it may be stated, that section or destruction of the sympathetic filaments proceeding to a part causes increase of heat, which is constant, and hyperæmic injection more or less considerable, not always persistent, but capable of arriving at the condition of severe inflammation in states of debility or depression of the general system.

"That the hyperæmia is the result of dilatation of the arteries, in consequence of paralysis of their contractile coats, is not so certain, though it seems to me the most probable opinion. Bernard states that the first effect of the division is contraction of the carotid, and he looks upon the subsequent distension of the vessels as the result of afflux of blood to the part. However, the contraction of the pupil, which is doubtless occasioned by the paralysis of the radiating fibres of the iris, seems to indicate that the loss of the influence of the sympathetic does tend to paralyze contractile tissues, and the result above mentioned, of galvanizing the divided nerve, supports the same idea. Mr. Wharton Jones relates an observation in his paper, contained in the thirty-sixth volume of the 'Medico-Chirurgical Transactions,' which is further corroborative. He finds that after removal of the lower part of the spinal cord and the roots of the nerves, the arteries of the webs retain all their contractility, or are even more than usually disposed to be constricted. If now the ischiatic nerve be divided on one side, 'the result is that the skin of the extremity subjected to the experiment becomes, even to the naked eye, redder from vascular congestion than that of the opposite extremity, and on examination of the web under the microscope the arteries are found considerably dilated. In the web of the opposite extremity, on the contrary, the arteries are seen still much constricted, some even to closure.'"

The class of pathological facts upon which these experiments have a direct bearing is illustrated by an interesting case from Dr. Graves' 'Clinical Medicine,' (first edition, p. 868), and this case is made the text of the memoir. In it the prominent symptoms were severe paroxysmal attacks of pain, heat, and vascular congestion of both feet and legs as high as the calf. The attacks generally commenced at night, with heat and tingling of the sole of the foot; as it proceeded, the parts affected became more and more hyperæmic, till at length they were swollen, smooth, and shining, and almost the color of a ripe black cherry. "When the hot fit ceases, the slight swelling and this discoloration subside, and the affected parts remain during the next stage, pale, deadly cold, and comparatively free from pain. While one leg is in the hot stage, the opposite leg is cold and pale, but free from pain; but as soon as the pain and heat have disappeared in the limb first affected, the same series of phenomena commence in the other leg, and last for the same length of time; after which both limbs are in their natural state, and for two or three hours she is comparatively free from suffering, although some uneasiness still remains, which she compares to a numbness, or some such morbid sensation not easily defined." The paroxysms occurred daily, but the period and the duration of them varied, the intermission, which had been only three hours, being prolonged to eight at a later date. The affection came on after an attack of diarrhœa, which caused much debility; but she had previously been in a bad state of health, and the catamenia were suppressed. Improvement in health and restoration of the natural secretion did not, however, induce any alleviation of the disorder. No treatment was of any avail, though all possible measures were adopted. No paralysis, or impairment of motion or sensation, or alteration of structure, took place in six years, during which time the patient was under observation. This case, which was a source of perplexity to Dr. Graves, would certainly seem to meet with its explanation in the experiments under consideration.

Dr. H. Jones, however, does not content himself with this case. On the contrary, he adduces cases out of his own experience of greater or less significance. Thus:

CASE.—Dr. Vernon has mentioned a case to me which fell under his notice, where, during attacks of pain of neuralgic character, the eye and cheek became

the seat of extravasation. The patient was affected with syphilis. The pain would last very severely for forty-eight hours, then begin to remit, and at the same time a blush would appear in the part, which increased up to actual extravasation. Black and blue discoloration subsequently occurred. In this case, which has some resemblance to Dr. Graves', there was hyperæmia of such intensity as to cause actual hemorrhage. Minor degrees of hyperæmia are common in frontal neuralgia; the eye becomes red from injection of conjunctival vessels. Hyperæmia sometimes occurs in one part as the result of altered innervation of another at a distance. This is exemplified in the flushing of the face which so often occurs in persons of weak digestive power after meals. The following instance of this state is interesting, from its association with other indications of disordered nervous action:

CASE.—Mrs. C.—, of rather large, lax habit, about mid-age, mother of five children, daughter of a lady who has had repeated attacks of severe neuralgia, had chorea herself at the age of fourteen. She has much exertion with domestic cares, and her energies are overtasked; she feels that she could sleep much longer than she allows herself to do. Lately her face has begun to twitch, the mouth being frequently drawn awry, so much so that she is observed sometimes to hold it with her hand to steady it. Immediately on eating, her face and neck become quite suffused with blood—crimson—so that she does not venture to dine out. She is wonderfully better in frosty weather. At times she has sensations as if the top of her head were held by tense cords. In this case, there is evidence of disorder of the whole nervous system, the cerebral centre, the sensory, motor, and sympathetic nerves being all affected. The pathological state is one of defective nervous power, with undue excitability, and the tonic influence of cold weather seems to be the most effective remedy.

CASE.—M. A. B.—, æt. 19, housemaid, was admitted on March 19th. Is much confined to the house, and goes out once a week. The bowels regular; appetite good; digestion good; pulse excited; skin warm; tongue a little white, with some red papillæ. Has felt faint and weakly lately. Head hot and aching; sleeps well. Her aspect is now sanguine; but she is generally pale. Ill five days. Her cheeks are flushed, burning, and swollen, and of a decidedly redder color than natural. The redness of face has increased since its coming on, which was sudden, first observed on rising one morning. I gave her iron with citrate of quinine, eight grains; tincture of hyoscyamus, fifteen minims; peppermint water, one ounce three times a day.

March 26th.—Cheeks not near so hot; feels much better.

April 16th.—Is reported quite well.

CASE.—E. Q.—, æt. 33, female, cook, single, resident in the same house as the preceding patient; admitted on March 19th. Is tall, slight, with rather patchy red face; slight eczema of right cheek. Ill six months. Suffers with redness, and burning sensation of cheeks and all her face, increased by excitement and by heat of fire, or drinking beer, not by lying down. At the same time, her head feels as if it were bursting with the throbbing. Sleeps well; catamenia regular; bowels regular; tongue clean. Takes food well. Pulse full and excited. I marked the case as of the same character as her fellow servant's who came in just before her; but noticing that there was more appearance of actual inflammation in the latter than in the former, I modified the treatment, giving her disulphate of quinine, three grains; dilute sulphuric acid, ten minims; compound infusion of gentian, one ounce, three times a day; and desiring her to take daily open air exercise, which she had very seldom had. After a week the pulse was less full and excited (thus evidencing more tone); the face was not materially altered, but did not appear so red. I added sulphate of magnesia, fifteen grains, to the draught, and omitted one grain of quinine. The next week the face was less flushed. She had much headache. I gave her then, besides the mixture, an ointment to apply to the face, composed of zinc ointment and acetate of cerate of lead, of each two drachms. She continued this treatment for three or four weeks, still following her occupation, but not in the least my prescription of out-door exercise; and the result was that her face quite recovered, but she continued to suffer much with her head. After this she took citrate of iron and quinine, ten grains, three times a day, for another fortnight, at the end of

which she presented herself quite recovered. The face was decidedly less injected than I had yet seen it; but the skin showed some degree of roughness.

These two cases are of a very ordinary, commonplace kind, so much so that I almost feel I ought to apologize for quoting them, and yet, though miniatures, they may faithfully portray graver affections. In the first there was considerable hyperæmia, occurring in a weakly, house-confined girl, without any special disorder of health or cause to account for it. Ninety-nine such cases out of a hundred would have complained of pain in the left side; but in her the nerve disorder showed itself in the form of a semi-paralysis of the vascular nerves of the face. The tonic which cures most cases of ordinary neuralgia cured her. In the second case there was a very similar but more inflammatory condition of the face, with a special cause of aggravation (her employment), and at the same time there was evidence that the brain was affected in a like way. One cannot but think it very possible that the hyperæmia, which on the face showed a proneness to become inflammation, might do the same in the brain, and, if long-continued, cause a thickening of the arachnoid, or some degree of damage to the delicate gray neurine of the convolutions. It is specially interesting to find that the *visible* and the *concealed* hyperæmia disappeared alike under treatment, which was essentially tonic.

Dr. H. Jones also enters at some length into certain considerations respecting the relations which exist between neuralgia, ague, and some asthenic congestions, and between them all and paralysis of the sympathetic, but our space obliges us to limit ourselves to the point to which we have directed attention, and which is evidently of considerable practical importance.

On the Employment of Injections into the Bronchial Tubes, and into Tubercular Cavities of the Lungs. By HORACE GREEN, M.D. ("Transactions of the State Medical Society of the State of New York," 1855, and "American Monthly Journal of Medicine," January and July, 1855.)

On more than one occasion we have called attention to the plan of applying caustic solutions to the interior of the larynx and trachea, as carried out by Dr. Horace Green. The possibility of carrying out this practice (which was at first violently contested) has, we think, been sufficiently demonstrated, as well as the advantages which may result from it in some cases; but there are still sceptics to be found, and for their sake Dr. Green has been led to seek for further proofs, and these proofs have led to the institution of the mode of treatment, about which we have to speak presently. The further proof consisted in the introduction of an appropriate tube into the windpipe, and in making the patient breathe through it. The experiment was variously modified. The patient was made to blow out a candle by the draught through the tube. A small bladder was fastened to the extremity, and this was seen to collapse or expand as the chest expanded or fell. The inward and outward currents through the tube were shown by the movements of a feather held at its opening. And so on. These experiments were tried on many subjects, and to the satisfaction of many credible witnesses whose names are given; and after them, there can be no rational doubt as to the possibility, with proper precaution, of passing an instrument fairly into the air-passages. But this is not all. On the contrary, Dr. Green was carried away by his imagination far beyond this point. He had a tube in the air-passages, and what was to prevent him from passing injections through it into the lungs? Why not even inject a vomica with fluids which should favor the process of healing? The idea was no sooner conceived than carried out, and we have now to state the results of the practice, for it is our duty to record everything remarkable, bad or good. We pass no comment at present, except to express our surprise that so little distress was caused by the presence of the fluid in the lung.

Before relating the cases which we have marked for extraction, we may say that the subject has been the occasion of much dispute in the New York Academy of Medicine, and that a committee appointed to report upon it has sent in a divided verdict—the majority reporting against Dr. Green, the minority reporting in his favor. These reports are to be found at full in the American Monthly Magazine, for January and July, 1855.

The cases are as follows:

CASE 1.—Early in December, John B. Miner, professor of law in the University

of Virginia, came to New York for medical treatment. He was accompanied by his friend and colleague, Dr. Davis, the distinguished professor of anatomy of the University of Virginia, by whom, in connection with Dr. Cabell, Professor Miner had been treated.

I saw him first on the 4th December, 1854. Enfeebled by the journey, Professor Miner was unable to leave his room for a week after his arrival in New York. It will not be necessary to detail minutely the previous history of the case. From the patient, and Dr. Davis, I learned that symptoms of thoracic disease, following chronic follicular disease of the pharynx, made their appearance nearly a year before. A severe cough, with debility, emaciation, and occasional hemoptysis, were the rational signs most prominently manifested in his case.

The following was observed to be the condition of the patient at the first examination. There is dulness in percussion at the apex of the right lung. During inspiration, the upper part of the right chest expands less than the left. Expiration, on this side, is prolonged, whilst the respiratory murmur is increased in force under the left clavicle. The "clicking rhonchus" of Dr. Cotton, which is positively indicative of the existence of tubercles, is not observed, but numerous bronchial râles are heard on both sides. A severe cough, with large mucopurulent expectoration, which is occasionally streaked with blood, is present. The patient is very feeble, with loss of appetite, and a voice partially aphonic. Inspection of the throat revealed evidence of long-continued follicular disease; for the mucous crypts of the pharynx had disappeared, and the right tonsillary gland was entirely destroyed, and its place between the anterior and posterior columns was occupied by a large, deep ulcer. On looking into the throat this ulcer was entirely concealed by the anterior column, until this fold of the membrane was pushed aside by the finger. The uvula was elongated. At the request of Dr. Davis, and in consultation with him, I commenced the treatment of the patient. The elongated portion of the uvula was removed; applications of a strong solution of the nitrate of silver were made to the ulcerated portion of the throat and the pharynx, and the iodide of potassium, in combination with minute doses of the proto-iodide of mercury, was administered internally.

At the third application of the nitrate of silver solution, the sponge probang was passed into the larynx, and these operations were repeated daily until the 11th December. Under this topical medication the ulceration in the throat was healed, and the acute sensitiveness, peculiar to the opening of the glottis, was allayed. The cough was, also, to some extent, diminished; but this symptom was still severe, and the bronchial expectoration, and other thoracic symptoms, remained about the same as at first.

Confident, from the results which had followed the treatment in other similar cases, that the introduction of a large amount of the caustic fluid into the bronchial divisions would be attended with greater benefit to the patient, I resolved to make the attempt to inject the lungs.

On the 11th December, in the presence of Professor Davis and several other physicians, I introduced number 12, of Hutchings' flexible tubes, through the rima of the glottis, and carrying it down to the right bronchial division of the trachea, I injected, with a small glass syringe, one and a half drachm of a solution of nitrate of silver, of the strength of thirty grains to the ounce of water, through this tube into the lung.

This operation was performed without producing any cough, except at the moment of the introduction of the tube into the opening of the glottis; nor did any feeling of suffocation, or any irritation whatever, follow the introduction of the solution into the chest.

On the 12th, the operation was repeated, and the same amount of the caustic solution was injected into the bronchial tubes. On the 14th and 15th, the larynx and trachea were cauterized by the application of the sponge probang to those parts, and on the 16th, the tube was again inserted, and the bronchial divisions injected with nearly two drachms of the argentine solution. The cough and expectoration of the patient now diminished much more rapidly than when the probang only was employed. His appetite was restored, and his strength and general health improved daily. This operation of catheterism of the air tubes was continued until the 25th of the month, when Professor Miner considered himself

sufficiently restored to health to return to his home, and resume his duties as lecturer in the university. He had in this time gained several pounds of flesh; his cough and expectoration, which had harassed him for months, had disappeared, and from an enfeebled condition, which prevented him from walking the distance of one block without assistance, he had regained so much in strength and vigor, that for several days before he left New York he walked daily two or three miles without fatigue or inconvenience.

But what is equally interesting and important is the fact, that in an examination of the patient's chest, on the day of his departure for home (and this examination was made not only by myself, but by several good auscultators), it was found that the physical signs which were present at first had quite disappeared.

Only a day or two ago, I received a letter from Dr. Davis, in which he writes, "It will be gratifying to you to know that Professor Miner has not been compelled to suspend his lectures, or to omit his daily exercise since his return," for a single day.

CASE 2.—James Moore, of New York, æt. 35, came under treatment September 24th, 1853. In September, one year before, Mr. Moore began to lose flesh, debility, with a slight cough, soon came on. He had suffered occasionally for several years from chronic pharyngeal disease, and enlarged and diseased tonsils. But as this condition of his throat had occasioned but little inconvenience, no particular attention had been called to it until symptoms of thoracic disease made their appearance.

These continued to increase during the winter and spring of 1854. A severe cough, with subsequently a free, muco-purulent expectoration, constant emaciation and debility, were the prominent symptoms in his case; symptoms which gradually augmented in severity until the above period, the 24th of September, when he came under my care. At this time the rational signs which his case presented were those above named, together with dyspnoea, on exertion being made, and partial aphonia.

The physical signs were correspondent. Dulness on percussion, with crepitating râles were observed over a part of the right lung. Near the upper portion of this lung, strongly marked signs of a tuberculous excavation were present. These physical signs were observed by several good auscultators.

The throat of the patient was in a diseased condition. The uvula was elongated, the follicles of the pharynx were inflamed and enlarged, and full of ulcerated openings, from which purulent matter exuded.

The diseased portions of the enlarged tonsils were removed, the uvula shortened, topical applications of the nitrate of silver were made to the pharynx, and were soon carried into the larynx and trachea, and the iodide of potassium, with tonic and supporting remedies, were administered.

This plan of treatment was continued (the applications being made twice and three times a week) until early in November, varied, so far as the general treatment was concerned, as circumstances seemed to indicate. During this time the patient made some improvement; his voice was restored, his cough was in some degree lessened; but the amount expectorated in the twenty-four hours remained about the same, and it was remarked that the patient continued gradually to emaciate. After consultation with some of my professional friends with regard to his case, it was concluded to employ catheterism, and to carry the point of the injecting tube, if possible, into the right bronchial division. This operation was performed first on the 13th of November, and nearly two drachms of the argentine solution injected into the right lung.

This operation was repeated once in two or four days, alternating the tube with the sponge probang, until the 15th of January. Within twenty-four hours after the first injection, both the cough and the expectoration of the patient began to diminish. He soon commenced to regain flesh and strength, and every unfavorable symptom continued gradually, and in comparison with what had previously occurred, rapidly to diminish.

On the 6th of January, along with my colleague, Professor E. H. Parker, I made a careful examination of the patient's chest. The respiratory murmur could be heard full and clear on both sides; prolonged expiration in one location was the only abnormal sign present.

January 25th, Mr. Moore called again, and reported himself "quite well." He

has no cough or expectoration, except some slight raising in the morning. He is quite strong and hearty, can walk any reasonable distance, and attends constantly to his ordinary business.

CASE 3.—In December last, Dr. Peck, of Circleville, Ohio, called on me, and stated that he had accompanied from Ohio, at the request of her husband, Mrs. S. N. Adams, to New York, for the purpose of consulting me in regard to her case. An appointment was made to see the patient the next day. On the 25th of December, in company with her physician, Dr. Peck, I examined Mrs. A.'s case. She had had long-continued folliculitis of the pharyngo-laryngeal membrane, with enlarged and diseased tonsils.

Auscultation revealed signs of extensive bronchitis, with pulmonary emphysema. Slight dulness, which was found on percussion, immediately under the right clavicle, with rough respiration, gave indications of the commencement of tubercular excavation in this locality.

The patient was feeble and emaciated. She had a hard cough, with constant dyspnoea, and large muco-purulent expectoration. But the most troublesome and harassing feature of her complaint, was the occurrence nightly of a severe and distressing attack of spasmodic asthma, so severe as to deprive her entirely of sleep during the whole night. It was only after the appearance of daylight, by being supported in a sitting posture, that a brief period of repose could be obtained. These attacks had continued to occur for several months, every night, and with great regularity. All the ordinary remedies, Dr. P. informed me, had been employed in the management of the case, without obtaining any material alleviation of the symptoms.

In commencing the treatment of Mrs. A.'s case, the enlarged and diseased portions of the tonsillary glands were removed; applications of a strong solution of the nitrate of silver were made daily to the pharyngo-laryngeal and tracheal membrane. The iodide of potassium, in a decoction of polygala senega, together with anti-spasmodics, was internally administered. The cough and expectoration were somewhat diminished under this treatment, but the periodic attacks of asthma were in no degree relieved.

On the 4th January, instead of employing the sponge probang, the elastic tube was introduced, and one drachm and a half of the nitrate of silver solution injected into the bronchi. These operations with the tube, alternating them with the use of the probang, were continued until the 15th of the month, when the patient left the city for her home in Ohio. After the second operation of catheterism, in Mrs. A.'s case, the severity of her symptoms was considerably diminished. Her cough, expectoration, and difficulty of breathing, were all improved, and several nights before leaving the city, she slept quietly all night without any return of the paroxysms of asthma. As she was now anxious to go to her family, it was deemed advisable that she should leave, and that Dr. Peck, who had remained during this time in New York, and had observed her treatment, should continue it as long as necessary after her return to her home.

Burials in Charcoal. By B. W. RICHARDSON. ("Journal of Health," June and September, 1855.

The present system of burial is attended with two serious drawbacks. It entails expense which can be ill borne by many, and which is a heavy tax upon the poor, and it does violence to the wish which the poor and rich alike experience of being able to sleep at length among the ashes of those dear to them. These are serious drawbacks to the present system of burial, and therefore we are glad to meet with a suggestion of Dr. Richardson's, which promises to obviate them. This is to enclose the corpse in charcoal before burial. This idea, which arises very naturally out of the recent investigations of Dr. Stenhouse ("Abstract," No. XXI), requires only to be mentioned to be appreciated; for charcoal, as is well known, has the power of hastening decomposition, and of destroying the offensive and noxious products of decomposition. Buried in it, indeed, there is no reason why the dead should not rest within the shadow of the church, even in towns. The expense, also, is very inconsiderable, for it is calculated that a layer of pounded charcoal, four inches in thickness, would be sufficient for every purpose. We thank Dr. Richardson for the suggestion, and *shall be glad to hear more about it.*

II.

REPORT ON THE PROGRESS OF SURGERY

Report on Dislocations, with especial reference to their results. By Dr. FRANK H. HAMILTON, of Buffalo. ("Transactions of the State Medical Society of the State of New York," 1855.)

THIS report is a very laudable attempt to supply information which is not to be met with in systematic works on surgery, but which nevertheless, is of great practical moment. This information is upon the results of treatment. These results, there is reason to believe, are much less favorable than is generally supposed, and it is well, therefore, that the surgeon should be upon his guard, and not promise more to his patient than the case really warrants. This investigation, moreover, promises to be beneficial by pointing out the results of particular modes of treatment, and by thus showing which mode is to be preferred above others.

In the present report, Dr. Hamilton furnishes the notes of a great number of cases which have come under his notice, directly and indirectly, during the last twenty-one years, and much praise is due to him for the careful manner in which he has carried out his object. It is necessary, however, to wait for additional reports of the same kind before we can draw any comprehensive conclusion; and at present we must content ourselves with saying that the evidence, so far as it goes, is to show that the results of dislocations and fractures are more unfavorable than we might have been disposed to suspect. We hope Dr. Hamilton will continue his inquiries, and that other surgeons will not be slow to imitate his example.

Some cases of Fractures and Dislocations in which it appeared expedient to divide the Tendo-Achillis for the purpose of replacing the separated bones and retaining them in position. By EDWARD COCK, Surgeon to Guy's Hospital. ("Guy's Hospital Reports," 1855.)

The principle which suggested tenotomy to the orthopædist for the cure of distortion has been successfully applied in aiding the reduction of dislocation, and in preventing the two ends of a broken bone from being displaced. Two cases are related in the "Medico-Chirurgical Transactions" for 1850, in which the tendo-Achillis was divided for fracture of the leg—one by Mr. de Morgan, and the other by Mr. Shaw; and since this time a similar practice has been frequently adopted in the Middlesex and in Guy's Hospital. No doubt the introduction of chloroform very greatly reduces the number of cases in which any such operation can be required for the reduction of a dislocated bone, for chloroform effectually removes the difficulties arising from muscular contraction; but there are a great number of cases in which the bones cannot be kept in their proper place, and to which the practice in question seems to offer the most rational mode of treatment.

Mr. Cock relates several cases which have occurred in his own and his colleagues' practice, and we give the former, leaving them to tell their own tale:

CASE 1. — *Dislocation of Ankle forwards.*—T. B——, æt. 16, was admitted into Luke Ward, December 30th, 1852. About a week previously, he had dislo-

cated the tibia and fibula forwards on to the instep, and although reduction had been effected two or three times by an excellent surgeon in the country, yet the luxation was as often reproduced, apparently by the action of the gastrocnemic muscles.

This fact I verified soon after his admission, and considered it a fit case for division of the tendo-Achillis. The section was made; after which the bones were readily restored, and retained in the normal position without difficulty. The patient left the hospital in about two weeks, perfectly well.

CASE 2.—*Fracture of the Leg.*—R. S.—, æt. 64, was admitted into Accident Ward, January 8th, 1853, a cabman, of most intemperate habits. Both bones of the leg were broken a little below the knee. He proved most refractory and unmanageable, and delirium tremens came on a few hours after his admission. Every means employed failed in confining his leg, as he seemed to derive a singular satisfaction in drawing it up, until a considerable angle was formed at the seat of fracture, while the upper fragment threatened to pierce the skin. As all remonstrance proved unavailing, I divided the tendo-Achillis on January 10th; two days after his admission. He seemed to experience much disappointment at being no longer able to displace the bones; and although the delirium continued several days, the fracture was kept tolerably quiet, and he finally left the hospital with a good leg.

CASE 3.—*Dislocation of the Ankle.*—T. R.—, æt. 52, a farmer's man, at Epsom, was admitted into Cornelius Ward, January 8th, 1853. He had fallen the same morning from a load of barley, and dislocated his right ankle.

Mr. Stillwell and Mr. Shelley, of Epsom, had used every possible means of extension and manipulation to reduce the foot, without effect. When I examined him, about fourteen hours after the accident, I found the right foot completely dislocated inwards. The sole of the foot faced inwards; the internal malleolus, which was probably broken, lay buried, and could not be felt. The fibula was entire, and the outer malleolus was most prominent, and threatened to pierce the skin. The distortion, increased by the tumefaction, was very great, and precluded the possibility of detecting any fracture which might have occurred to the tibia or astragalus. The foot was perfectly immovable, and refused to yield to any extension in any direction. The tendo-Achillis was exceedingly tense, and he complained of pain in the calf of the leg. I now divided the tendon, and again had recourse to the same manipulations as before, but with better success, as the foot now yielded to the force employed, and became straight. I could not, however, entirely complete the reduction, as I found it impossible to bring the malleolus externus into accurate apposition with the corresponding articular surface on the outer side of the astragalus. I believe that the peronei tendons had been torn from their attachment to the lower extremity of the fibula, and had assumed a position on the inner side of the malleolus externus, so that they intervened between the two bones, and prevented their approximation. In a few days, however, the position of the parts had greatly improved, and there was but little abnormal projection of the outer ankle. He partially recovered the use of his foot, and left the hospital about the end of February.

CASE 4.—*Fracture of Leg.*—D. U.—, æt. 12, was admitted into Cornelius Ward, April 13th, 1853. I have no memorandum as regards the nature of the accident, but both bones of the leg were broken just above the ankle, and the foot was turned inwards, presenting somewhat the appearance of a dislocation at the ankle-joint. The distortion was very great and remarkable, the upper portion of the tibia projecting nearly through the skin. The displacement would not yield to any amount of extension even when employed while the patient was under the influence of chloroform. I then divided the tendo-Achillis, which was tightly stretched, and repeated the extension by the aid of a round towel attached to the foot. The bones were now replaced with comparative ease, and the case progressed and terminated favorably.

CASE 5.—*Fracture of the Leg.*—J. T.—, æt. 58, was admitted into Accident Ward, March 9th, 1853. He had fallen from a height, and fractured both bones of the leg about one third below the knee. On his admission, the tibia presented a considerable angle which projected forwards. All attempts to straighten the limb proved fruitless. There was much general muscular spasm, but the chief

impediment to the reduction of the bones appeared to be the *tibialis anticus*, the tendon of which was unusually large, and so tightly stretched as to keep the foot in a state of extreme flexion. I divided this tendon, and the broken bones were then adjusted without much difficulty. The termination of the case was perfectly successful.

CASE 6.—Compound Fracture of the Leg.—J. D——, æt. 26, was admitted into Luke Ward, April 20th, 1853. His left leg had been extensively lacerated, and the tibia comminuted about one-third below the knee, by a railway accident. The fibula was broken just below its head; the displacement of the bones was very great; and the constant spasmodic action of the muscles foiled our attempts at adaptation. Under these circumstances, I divided the *tendo-Achillis*, which had the immediate effect of quieting the limb, and allowing a tolerable adjustment of the fracture.

He subsequently died of phlebitis.

CASE 7.—Compound Fracture of the Leg.—F. L——, æt. 42, was admitted into Accident Ward, April 8th, 1854. A slab of stone had fallen on his left leg, and broken both bones about one-third above the ankle, with much general contusion and injury. The upper portion of the tibia projected through the skin on the fore and inner part. The fracture was reduced, and the limb placed on the outer side, but the disturbance produced by the action of the *gastrocnemius* muscle continued to be so annoying, that I divided the *tendo-Achillis* on the fourth day after the accident. No farther difficulty was experienced, and the case did well.

CASE 8.—Fracture of the Leg.—H. S——, æt. 20, was admitted into Accident Ward, April 29th, 1854. Both bones were broken about the middle of the leg; the lower fractured end of the tibia was thrown forward, just piercing the skin, and resting on the anterior surface of the upper portion. There was much effusion and ecchymosis: the broken bones could not be brought into apposition, and on May 4th, five days after the injury, I divided the *tendo-Achillis*. A much better position was then obtained, and the patient ultimately recovered, with a tolerably straight leg.

CASE 9.—Dislocation of Ankle.—J. H——, æt. 41, was admitted into Accident Ward, July 22d, 1854. He had fallen and dislocated his ankle. The foot was turned outwards; the tibia had been thrown off the *astragalus*, and the *malleolus internus* projected inwards, so as nearly to pierce the skin. There was considerable tumefaction. The usual means for reduction were adopted, under chloroform, without success. The next day, I divided the *tendo-Achillis*, when reduction was effected without difficulty.

CASE 10.—Dislocation of Ankle.—J. G——, æt. 50, was admitted into Accident Ward, August 15th, 1854. He was intoxicated at the time of his admission, and, not being watched, got out of bed and attempted to walk. When I saw him for the first time, on the following day, I found a dislocation of the tibia inwards and forwards; the foot being partly twisted round. There was much swelling, and he suffered great pain. All attempts at reduction failed until I divided the *tendo-Achillis*, after which, by gentle traction, the bones were gradually restored to their place. He left the hospital well in a few weeks.

In all the cases I have enumerated, the division of the *tendo-Achillis* appeared to be perfectly innocuous at the time, and devoid of any after mischievous consequences.

On certain consequences of dividing the Tendons of contracted Muscles. By JAMES BRAID, Esq., of Manchester. ("Associated Medical Journal," September 14, 1854.)

In the same paper in which we find the application of hypnotism to the treatment of hysterical paralysis or spasm, we find the statement of certain facts, which are not sufficiently understood or appreciated by orthopædic surgeons. Mr. Braid first directed attention to them in 1841. "It is a curious fact," he says, "that a rigid and permanent contraction of one or two muscles may be sufficient to exhaust the whole nervous and muscular energy of the leg or arm where it occurs, so that there shall be a loss of heat, feeling, and muscular energy of the whole member, all of which may be restored, with so much rapidity, by simply

dividing the tendons of the contracted muscles, that it would be no difficult matter to make superstitious people believe that a miracle had been performed. Every one who has treated cases of club-foot must have observed the increase of temperature which follows the operation; but, in cases of contraction of the hand, and fingers, and arm, from any contraction of the biceps, long flexors of the wrist and fingers, &c., the division of their tendons has, in many instances, been followed by the most surprising results. Not only have the hands and fingers been set at liberty, but such increased energy has been restored to the whole arm, that patients of upwards of thirty years of age, who had been deprived of the power of lifting their arms for five or six or more years, have, in the course of two or three minutes, been able to lift them to their heads. In one case, a patient, upwards of seventy years of age, who had paralysis of the right side, and had been dumb for three or four years, in eight or ten minutes after the operation, was able to lift the arm pretty freely, and the following morning spoke for the first time since his paralytic seizure.

"To maintain this advantage, so soon as the cutaneous wounds have closed, and lymph has been effused to unite the dividend ends of the tendons, it is necessary to make extension, so as to insure a new portion of tendon growing into the point of separation, otherwise, on the reunion, contraction might be re-established, and with that the original feeble state of the member.

"The only physiological reason which I can offer, as to the cause of the restoration of power and feeling after these operations, is this. I infer that a certain amount of nervous energy is elaborated for each member for the general supply of the whole of its functions, and that the quantity necessary to maintain these muscles in this state of morbid tension produces enervation of all the others, with loss of tone, and languid circulation. The operation, by cutting off this profuse expenditure in one channel, allows it to flow for the general benefit of the whole, and hence the muscular power is restored, with freer circulation of blood, which will, of course, produce an increase of heat in the whole member. The operation is also frequently followed by increased vigor of the whole body. This was remarkably evinced in a boy on whom I operated for talipes, from contraction, in 1840. He was ten years of age, paralytic of the leg, so that he had never had the power either of standing or walking on it, and so weak in his body generally, that he was a most pitiable object, leaning feebly over his crutches, unable to support his head erect. In three weeks after the operation, he was able to walk across the floor by the help of supporting him by the hands. In a short time longer, he could walk with his crutches, supporting most of his weight on the leg, and supporting the head with ease; and ere long he was enabled to throw his crutches aside entirely, and walk with a little stick in his hand."

We cannot accept the explanation, but we state the fact, and a case in illustration.

CASE 1.—On the 3d of March, 1854, I was consulted in the case of a boy, 3 years and 9 months old. His father was a strong healthy man; his mother had been delicate ever since her second confinement. She was the mother of four daughters and four sons, and all the four sons, of whom my patient was the youngest, were born at the seventh month. My patient had a well-developed brain, and seemed very intelligent for his age; but he had never had the volitional control of either legs, arms, or fingers. He had never been able to pass his arms round any one nursing him, so as to aid in supporting himself, nor to lay hold of, or pick up anything with his fingers, or fingers and thumb. When he attempted to grasp hold of anything, it was a mere clutch with the whole fingers together, and he had no power of loosing his hold but in the same manner. As regarded the inferior extremities, from tonic spasm of the internal iliac and psoas muscles, the thighs were permanently and rigidly flexed on the trunk; and, from a similar state of the adductors of both thighs, the knees were held rigidly in close contact. Moreover, from rigid tonic spasm of the flexor muscles of both legs, they were held strongly flexed on the thighs; and, from tonic contraction of the gastrocnemii muscles of both legs, the heels were drawn up, and the toes and feet held extended, in the form of a complete case of talipes equinus. The boy was thus as miserable an object as could well be imagined, entirely

deprived of the use of both superior and inferior extremities. Several professional gentlemen had been consulted in this case, but without having afforded him the slightest relief. At length, one professional gentleman, personally unknown to me, recommended the parents to bring him to me, from knowing that I had given a considerable share of attention to the treatment of various distortions.

By the hypnotic process I was enabled to excite the antagonist classes of muscles into play, and thus reduce the morbid activity of those which had bound the limbs in this state of permanent rigid contraction; so that in about ten minutes I was enabled, with very little effort, to extend and separate his legs to an extent which never could be achieved previously by the strongest efforts which any one had applied to them. This same process was repeated with equally satisfactory results on two subsequent days; but it appeared to me that the far most speedy and certain mode of effecting a cure in such a case would be at once to divide the tendo-Achillis in both legs by subcutaneous section, and thereby ingraft a portion of new substance between the divided ends of the tendons, as practised in treating ordinary cases of talipes equinus. By this means I not only expected to restore the feet speedily to the normal position, but also that there would be a decided improvement effected on many of the other morbidly contracted muscles, through the laws of sympathy and consensual action, which plays such an important part in nervous power and muscular motion. To this proposal, the parents readily gave their assent, and I operated accordingly on both legs, on the 8th of March, 1854. The small punctures in the skin, made by the narrow blade of the tendon knife, having been closed by adhesive plaster, I applied splints and bandages, so as to retain the feet in their original malposition, and compress the gastrocnemii muscles, so as to prevent such separation of the ends of the severed tendons as might prevent the lymph thrown out extending to both ends, and thereby preventing their ultimate reunion. In two days the splints and bandages were removed and reapplied; but so as to secure slight extension, and a farther effusion of lymph, to increase the bond or medium of reunion. This extension was increased at each dressing, so that, in fourteen days there was sufficient addition of substance implanted between the divided ends of each tendo-Achillis to permit the feet to assume the natural position to the legs, and sufficiently strong to warrant me in removing the splints and bandages, and providing the patient with a pair of lace-up leather boots, with side splints. Having put on the boots he was found able to stand with his feet flat to the floor, and to support a considerable portion of the weight of his body by his own muscular efforts.

I had also applied gutta-percha splints, behind the legs and thighs, supported bandages, so as to assist in overcoming the contraction of the flexors of the legs. These were kept constantly applied night and day for a month, and, after that period, during the night only for ten weeks, after which they were entirely dispensed with. At each dressing, moreover, I manipulated, as in the first instance, so as to excite the morbidly weak muscles, and to subdue the morbid rigidity of the others. I also induced the patient to exert his best efforts at walking during my visits, and the result was that a considerable increase of power had been attained by him at the end of April; and, on the 2d of May, I sent him into the country for the benefit of air and exercise. He remained in the country till the beginning of August with decided advantage. Since his return home, I saw this patient a few times, when I have manipulated and exercised him as I did prior to the division of the tendons, which manipulations seemed also to be highly beneficial to him.

There is one remarkable fact connected with this case, to which I beg now to direct your special attention, in corroboration of what was remarked at the commencement of this paper,—viz., that in about six-and-twenty hours after the section of the Achillis tendons,—the patient was discovered to have acquired complete volitional power of his arms, hands, and fingers, for the first time during his life; and the most gratifying part of the narrative is this, that his volitional control has remained perfect ever since; thus clearly proving the remarkable consensual and sympathetic influence of one part of the muscular and nervous system with that of others.

In the same paper, Mr. Braid relates several cases, in which he cured relaxed and paralyzed muscles by excising a portion of the tendons, and by bringing the divided extremities together and securing their adhesion in this position. In these cases, also, the division of the tendon seemed to stimulate the muscle and the system generally to some degree of higher activity—and the fact is well worth the attention of surgeons—but our present purpose is merely to direct attention to the collateral effects of the Stromeyerian operation—effects which show that the immediate effect upon the muscle is only part of the benefit derived from the operation.

On the treatment of Dislocation of the Hip by Manipulation only. By W. W. REID, M.D., of Rochester, New York. ("New York Journal of Medicine," July, 1855.)

In this paper Dr. Reid criticises at considerable length the paper of Dr. Markoe upon the same subject ("Abstract," No. XXI), and in stating his own views more clearly, corrects some errors into which Dr. Markoe has fallen.

Dr. Reid deduces the following proportions and rules from his experiments and observations:

"1. The chief impediment in the reduction of dislocations is the indirect action of muscles put upon the stretch, by the malposition of the dislocated bone, and not in the contraction of muscles that are shortened [as heretofore taught].

"2. That muscles are capable of so little extension, beyond their normal length, without hazard of rupture, that no attempt should be made to stretch them further, in order to reduce a dislocation, if it can possibly be avoided.

"3. The general rule for reducing dislocations should be, that the limb or bone should be carried, flexed or drawn in that direction which will relax the distended muscles.

"This general rule will apply to all luxations, but especially to the several varieties that pertain to the hip-joint."

Again, in another place:

"The method of manipulating, as employed and described by me in the article published by me in the 'Buffalo Medical Journal' for August, 1851, and again in the proceedings of the State Medical Society, February, 1852, was as follows:—Let the operator stand or kneel on the injured side, seize the ankle with one hand, the knee with the other, then flex the leg on the thigh, next strongly abduct it, carrying it over the sound one, and at the same time upward over the pelvis, by a kind of semicircular sweep, as high as the umbilicus; *then abduct the knee gently*, turn the toes outwards, the heel inwards, *and carry the foot across the opposite and sound limb, making gentle oscillations of the thigh*, when the head of the bone will slip into its socket.

"'Gentle oscillations of the thigh,' while the head of the bone is poised upon a mere point, as before described, and while the foot and leg are directed towards and across the opposite limb, and steadily held in that position, will be found, I apprehend, to be 'a procedure that varies a little' from that recommended by Dr. Markoe, viz., a rocking motion of the leg, while the thigh is being brought to the straight position *strongly abducted*.

"When the thigh is flexed on the trunk, say at an angle of 45°, and is gently abducted, and the head of the bone thus brought close to the lower edge of the acetabulum, if, while gentle oscillations of the thigh are made at the knee, it—the head—does not immediately enter the socket, the knee should be alternately elevated and depressed, thus varying the angle of the thigh. If, by this manœuvre, alternated with the beforementioned oscillating or lateral movement, the head does not enter, we should then cease all motion, and hold the thigh and leg perfectly quiet, for a short period, keeping the former still slightly abducted; and thus give the irritated muscles, ligaments, and tissues time to become quiescent, and to accommodate themselves to the new position of the bone. The foot and leg must be kept still also, and firmly directed towards the opposite thigh; for, if we relax or carry it outward, we shall roll the head of the femur away from its resting place and proximity to the acetabulum, and permit, if not provoke, the muscles, as already described, to draw it downward into the foramen ovale or

backward into the ischiatic notch or dorsum ilii. After a short time we may repeat our attempts as above described, and in all suitable cases—that is, cases of dislocation on the dorsum or into the ischiatic notch, and of not over four to six weeks' standing—we may confidently anticipate a speedy and favorable issue.

“The accidents which occurred during the manipulations of Dr. Markoe and his coadjutors, with the exception of one, in Case 14, were by no means serious; they were in fact discoveries, and afford us valuable lessons and suggestions. It is certainly something new in the annals of surgery, that a surgeon can, at his pleasure, convert any one of the four kinds of dislocation of the hip-joint into any one of another kind. With this additional knowledge, which furnishes us with a choice of position from which to attempt reduction, or, if one fails, to try another, it seems to me, that these heretofore most formidable luxations of the femur may hereafter become, when the *modus operandi* by manipulation is better understood, quite trivial affairs, and be reduced with as much, if not greater facility, than now obtains in reduction of the shoulder-joint.”

It is of extreme importance to follow out the exact rule in placing and moving the thigh, so as to gain the proper help of the muscles in effecting the reduction, and to enforce this position, Dr. Reid refers to a statement by Professor Moore on this subject.

“Dr. Moore states a fact, which I had observed, that when the muscles about the joint are entire, if the femur is flexed on the trunk and abducted, the glutei muscles are stretched, and then their broad tendons compress the trochanter, and powerfully assist rotation and abduction, to urge the head of the bone into the socket; very much as might be done by the hands, if placed over the trochanter, but much more efficiently. But if the thigh is brought down to a right angle or lower, the tendons of the glutei are relaxed, and we thereby lose all the advantage which they would otherwise afford us—another cogent reason for not bringing down the limb towards the straight position before the head enters the socket.”

Dr. Reid also thinks that Dr. Markoe may have failed in some of his cases in consequence of having subjected the patient to etherization, for it is possible that the ether may have relaxed the muscles and so prevented that co-operative action of which mention has just been made.

“One word on the use of ether and chloroform in reduction of luxations. Believing, as I do, that muscles are the principal agents in producing dislocations, while the blow received is but secondary—that is, that the muscles being in a state of active contraction by force of the will, at that instant a sudden blow, taking the will by surprise, is received on the limb, and propelling it in the same direction which the contracting muscles are giving it, the bone is thrown out of place before the opposing muscles have time to resist this new impulse. I am therefore constrained to believe, also, that muscles may be made, and are, in fact, our most efficient assistants in reducing by manipulation. Consequently ‘etherization to the extent of complete relaxation,’ instead of being an advantage is a detriment, in just so far as it prevents the contraction of the muscles required to replace the bone. Might not this have been one of the causes of so many unsuccessful attempts at reduction, which are narrated in the report of Dr. Markoe? Etherization was employed in every case reported as occurring in the hospital, except No. 5, and that was the only one which was reduced without difficulty or mishap. The pain produced by manipulation is too trifling to require an anæsthetic of any kind. These remarks, of course, are not intended to apply to cases of luxations complicated with other severe or painful injuries, nor to reduction by forcible traction or mechanical means.”

III.

REPORT ON THE PROGRESS OF MIDWIFERY AND THE DISEASES OF WOMEN AND CHILDREN.

Clinical Lectures on the Diseases of Women and Children. By GUNNING S. BEDFORD, A.M., M.D., New York. (Trübner and Co., Paternoster Row, London, 1855.)

ALTHOUGH we are indebted to America for the application of anæsthesia to therapeutics, and for exhibiting to us the almost inexhaustible powers by which nature sometimes recovers patients from operations to us appalling by their boldness and magnitude, still we may safely say there is no American school of medicine; whereas there is a French, a German, an Italian, and an English. Our Transatlantic offspring reprint, translate, and pirate the medical works of other nations, but they produce little of their own. Their pathology is chiefly French, their therapeutics English.

In so vast a country, there doubtless are many eminent medical men, and some whose works are valued, but even in most of these we can detect the national characteristic—the impulse to go ahead. The working men in America are always on the look-out for the new lights rising over the old world, and they often too hastily adopt as the pure gold of science, the crude lucubrations which must find place with more valuable matter, in the weekly medical press. But this observation does not apply to our author, who is creditably known by other works, and in the one before us shows himself to be a judicious physician, anxious alike for the good of his patients and of his pupils; one who has acquired the happy art of teaching how to get at the characteristics of disease, and how to drag at the chain of effects until the mind grasps the first link in the chain. The work before us would, however, it seems to us, be more useful to the American medical student, had cases of the same disease been placed side by side, so as to light each other and facilitate introductory remarks. Instead of this, similar cases are placed at random in different lectures, and not unfrequently are the most interesting cases cut in two, the halves being separated by thirty pages of letter press. This might easily be corrected without altering the form of the lectures. Not quite so easy, however, would it be to make another alteration, which would require the work to be almost rewritten. We allude to the singular conversations introduced, between the doctor and his patient, which pervade the book, and for which Dr. Bedford has followed the unhappy example of Dr. Meigs. Now, though it is often extremely useful to give the precise words by which a patient gives, as it were, the reflected image of what she feels; though the noting down of the question and answer not unfrequently gives the pith of the case; yet to half fill a volume with unnecessary twaddle, real or imaginary, faintly enlivened by an attempt at a witticism, or a grand display of professional disinterestedness, is a practice that should be discountenanced as much as possible.

Without further reflections, we shall proceed to let the reader judge of the merits of Dr. Bedford's work by a few extracts, selected as most interesting to the profession, and shall commence with a subject warmly debated some time ago, and upon which opinions are still divided. We allude to "ulcerations of the os uteri." Dr. Bedford admits the frequency of uterine lesions, and lays a

stress on the necessity of their local treatment. He dissents from the views maintained by Dr. West in his pamphlet, and thus sums up his own views:

"1. That ulceration of the *os uteri* is of frequent occurrence. 2. That in many instances, this ulceration is little more than a simple abrasion, giving rise to no local or constitutional disturbance, and will readily yield to rest in the recumbent position. 3. That neither the abrasion nor ulceration can be strictly considered primary affections—the former being frequently connected with congestion, whilst the latter is the result of inflammation of the organ. 4. That oftentimes simple ulceration, unattended by any structural change in the uterus, will not develop either local or general disturbance of the system. 5. That in many cases ulceration of the *os* requires judicious local treatment. 6. That with the local applications there must often be conjoined constitutional measures. 7. That the disturbances of the general system dependent upon either ulceration of the *os uteri*, or other derangements of the organ, will cease with the removal of these derangements. 8. That constitutional disturbances are often referred to ulceration of the *os uteri*, when no ulcerations exist—but in lieu of which there is some functional or organic disease of the uterus."

Occlusion of the *os uteri* is so rarely met with, that its occurrence three times in a short period deserves notice. In discussing a case of this description, the author says:

"What does this woman tell us, and what is the real point elicited by the conversation to which you have just listened? It is simply this—that she is twenty-six years of age, the mother of two children, in the enjoyment of good health until two years and four months ago, when she had a miscarriage, followed by inflammation of the womb, *since which time her courses have been suppressed*. The feature, then, of this case is the suppression of the courses—but I shall prove to you that, in regarding the suppression in an abstract point of view, and attempting upon this partial basis to restore the function, you would not only fail in the accomplishment of the object for which your remedies are administered, but you would aggravate the sufferings of your patient, and lapse into positive empiricism.

"In reply to a question addressed to her a few moments since, she says: 'I have taken so much medicine that my stomach is quite turned over;' and again, she observes: 'I have forcing-pains every month, and that's the time the doctor told me to take the medicine; for it would bring on my turns.' If the declarations of the patient are of any value—if they establish any fact, it is this—that the sole object of the doctor was, through the medicines he ordered, to restore the menstrual functions, but he has, as you perceive, from the testimony of the patient, failed in the attainment of his purpose. Does it occur to any one of you why he has failed in affording relief to this woman? The entire interest of the case before us is embraced in this simple interrogatory; and its solution will shed a flood of light on the extraordinary circumstances which have caused the interruption of the menses for a period of two years and four months. You have seen in the Clinique numerous cases of suppressed menses, produced by various causes—and you have likewise witnessed how readily they have yielded to judicious treatment. But the suppression in the case of this patient differs materially from that of all others which have been before you; and with a field for observation of no limited circuit, and with a practice of fifty years, you would probably not meet with one similar in its leading features. Those of you who have attentively analyzed the conversation which has just passed between this patient and myself, will, perhaps, be struck with the important fact disclosed in the dialogue, viz.: that two years and four months ago she had a miscarriage, *followed by inflammation of the womb, and since that time her courses have been suppressed*. Before introducing this woman to you, I interrogated her very fully, and as soon as she made the above announcement, I began at once to suspect the cause of the suppression—and I immediately asked her whether she had not an enlargement in the lower portion of the abdomen. On her replying in the affirmative, I told her it would be necessary to institute an examination, in order that I might ascertain the true nature of her disease. To this she consented, and the examination has revealed a most interesting and unusual state of things.

"Before proceeding further, however, it is proper that I should tell you the motive and object of my suspicion. 1st. It occurred to me that this might be a case of menstrual suppression from an occlusion of the *os tincæ*. 2d. This opinion was formed from the circumstance that the suppression commenced immediately after the inflammation of the womb, and has continued to the present time. Supposing my suspicion to be confirmed by an examination, what connection, you may ask, is there between an occluded *os tincæ* and an enlargement of the lower portion of the abdomen? When the menstrual blood is secreted, and has no outlet, it necessarily accumulates, under ordinary circumstances, from month to month in the uterine cavity, and thus the enlargement is produced. In my lectures on pregnancy, you will not have forgotten how emphatically your attention was directed to this subject, and how earnestly you were cautioned against mistaking, especially in the unmarried, this state of things for gestation.

"But what gives peculiar interest to this case, and constitutes it an exception to a very general rule, is the fact that there is an *imperforate os tincæ in a female, who has borne two children*. The fact of her having given birth to two children necessarily presupposes that the mouth of the uterus was not always imperforate, or, in other words, that the occlusion was not congenital. What, then, has produced the occlusion? The whole history of the case seems to demonstrate that it is the result of the inflammation with which the patient was affected after her miscarriage. This is the third example of imperforate *os tincæ* I have met with during the last few years in married women, who had previously given birth to children. In the two former cases, I was called when the patients were in labor, and performed the operation of *vaginal hysterotomy*, and in both instances the mother and children were saved. [The first case was reported in the "New York Journal of Medicine" for 1843, the second in the "American Journal of the Medical Sciences" for 1848.] As soon as I had satisfied myself as to the true condition of the patient before us, I requested two of my staff, Drs. Martin and Savage, to institute an examination, and thus afforded them an opportunity of testing the truth of my diagnosis. Now, gentlemen, permit me to ask you what is the moral of this case? It is clearly this—that symptoms are not only faithless guides, but lead often to negative, if not to destructive results. Fortunately, in the present instance, the treatment has been limited to a negative issue. The indication here is obviously to remove, by an operation, the occlusion. It is the first step, without it all other medication would be abortive, and purely empirical.

"Madam, are you aware of the difficulty under which you labor?" "Yes, sir, I have heard you say that I have an obstruction." "That is a very proper word, my good woman. Do you wish to have the obstruction removed?" "Oh! sir, I would if it is not dangerous." "There is no danger, madam, if the operation be rightly performed; and if you will consent, I will perform it without any further delay." "You are sure, sir, it won't kill me?" "Indeed, I am, my good woman. We do not kill people—our profession is intended to save, and not to destroy human life." "But, sir, people do die in spite of the doctors." "Yes, madam, that is true; there is a limit to all human skill, and it sinks into insignificance before the high decrees of Heaven! Will you permit me to relieve you?" "Anything you say, doctor." "Then, madam, I will do what is right for you." [Here the patient was placed on the bed, and the tumefaction of the abdomen in the hypogastric region was clearly visible. The professor observed that he would use the curved trochar for the purpose of penetrating the imperforate *os*; and, accordingly, taking his index finger as a guide, he introduced the instrument to the central and lower portion of the cervix, and carrying the trochar upward parallel to the long axis of the uterus, penetrated the lower portion of the organ without the slightest difficulty. The instrument was then withdrawn, and immediately Simpson's sound introduced, showing conclusively that the neck of the uterus had been penetrated. As soon as the sound entered the organ, there was a discharge of nearly a quart of grumous blood, which the professor regarded as the menstrual fluid which had been accumulating within the cavity of the womb.] You perceive this operation is a simple one, and yet it is not without danger if incautiously performed. In order that the *os tincæ* may be kept

open, it will be proper for a few days to introduce a gum-elastic bougie. This is all that will be required. 'Now, madam, have I killed you?' 'No, sir, indeed you have not!' 'You may rejoice that your good sense in submitting to this operation, will be the means of restoring you to health.' 'Oh! sir, I owe my life to you.' 'Not at all, my good woman, you owe everything to yourself; I could have done nothing for you if it had not been that you were a sensible woman. Good morning.'"

In one of Dr. Bedford's three cases, the occlusion took place in consequence of repeated manipulation to induce miscarriage. No such means had been resorted to in the other cases, no caustic had been applied to the os uteri. The occlusion occurred, then, in consequence of inflammation so severe as to bring about the union of the lips of the womb by first intention. These cases will, therefore, be very interesting to those who admit that the neck of the womb is only susceptible of syphilitic inflammation. There are several valuable cases of hydatids of the womb; and the diagnosis of this complaint is well treated, as follows:

"1st. They may be mistaken for pregnancy. 2d. For polypus. 3d. For physometra. 4th. For hydrometra. 5th. For cauliflower excrescence, &c. The stethoscope, the ballotement, and the active movements of the fœtus, will determine the question of pregnancy after the fourth and a half month. In polypus, there is a mucous and bloody discharge, but no discharge of water; the polypus, also, can often be felt through the os tincæ, when it does not project into the vagina. In cauliflower excrescence there is a discharge of water, and when the pellicle, covering the granules, which really constitutes the disease, is ruptured, there is also a discharge of blood; but in cauliflower excrescence, the watery discharge is *continuous and not periodical*, for the reason that it is a secretion from the pellicle, to which we have just alluded. Hydrometra, or dropsy of the womb, is extremely rare; when it exists, the fluctuation will serve to distinguish it from hydatids.

"It is not difficult to explain this discharge of water. Uterine hydatids usually consist of small oblong sacs filled with serous fluid; these sacs are pediculated, and hence have been compared, not inaptly, to a bunch of grapes. They become developed in size, and those which are the most dependent in the uterine cavity, as they increase in volume, irritate the neck of the uterus; this organ is thrown into contraction for the time being; the dependent sacs are ruptured, and their contents, consisting of serum, are discharged through the vagina. The same thing occurs again in proportion as the sacs next in order become developed; and you see, therefore, why it is that the discharge of water in uterine hydatids is not continuous but periodical."

Describing another case of hydatids of the womb, in which the principal symptom had been vomiting, so intense that no remedies could abate it, he says:

"On applying my hand to the abdomen, I found the uterus enlarged, and occupying the hypogastric region. The alarming situation of the patient would not justify delay; if her life were to be saved, everything admonished us that it was to be done by instantaneous measures. My opinion of the case was, that the vomiting was sympathetic, and produced by irritation of the uterus. I therefore suggested the propriety of endeavoring to induce contraction of this organ, in order that its contents might be expelled. This view was concurred in by Dr. Whiting. Accordingly, with the doctor's request, desperate and almost hopeless as the case was, I introduced a female catheter into the uterus; in a short time the organ contracted, and a mass of hydatids was thrown off. Almost immediately, as if by enchantment, the vomiting ceased. The patient, after a tedious convalescence, from her extreme prostration, recovered, and is now in the enjoyment of robust health."

Flooding is rightly pointed out as the chief danger of the disease; and amongst the well-known means of inducing contraction of the womb, he mentions one of which we have frequently availed ourselves with good effect:

"A capital remedy, too, in such cases, is the introduction of a piece of ice into the vagina, carried up to the neck of the organ. This, sometimes, displays magic effects in producing uterine contractions, and upon a principle which has often been explained to you. The excitator nerves of the vagina becoming stimu-

lated by the action of the cold, this stimulus is transferred to the spinal cord, whence an impulse is given to the motor nerves of the uterus, which soon become the centre of powerful contractions. On the same principle, ice-water injected into the rectum, or against the mouth of the uterus, is a good remedy under these circumstances."

The following after-treatment is recommended:

"When the hydatids have been expelled, and the patient is convalescent, it will be proper to place her under the action of mercury and sarsaparilla, in order that any occult morbid action in the uterus, and more especially in its mucous lining, may be broken up. With this view, the following course may be pursued:

R Pil. massæ Hydrarg., gr. xxiv;
Pulv. Opii, gr. iij.
Ft. massa in pil. xij dividenda.

One of these pills to be taken night and morning until ptyalism is produced; after the salivation has been accomplished, let the patient drink half a pint of the compound decoction of sarsaparilla daily, and continue it for a month or six weeks. In the mean time, sexual intercourse should be prohibited. This treatment, together with change of air, sea-bathing, and a nutritious diet, will tend greatly to the restoration of the patient to health."

We are not prepared to endorse this statement until we have further proof of its correctness; but it must be remembered that mercury was so abused during the last century, that we are now, perhaps, over cautious in giving it. The dangers of salivation are not to be put in comparison with the dangers arising from interminable uterine complaints, and the medical man is not to be blamed, who, after trying all other measures, would seek to modify morbid structure by a course of mercury pushed to salivation.

Physometra is a very rare disease. In commenting on an evident case of this description the author observes:

"When tympanites uteri—physometra—exists, it is, I believe, in consequence of certain chemical changes, the immediate result of morbid action in the womb itself. A blighted ovum, a retained and decomposed placenta or fœtus, or the decomposition of any intra-uterine growth, may result in the extrication of a gaseous fluid, which constitutes the affection before us; and my own opinion is, that this patient is an example of this very cause. You remember the important fact to which she alluded, in reply to my questions, viz.: that the women would not permit her to see her infant after its birth, for the reason, as we suppose, that it was in a state of decomposition. This is a very interesting circumstance in connection with the case, and, I believe, fully explains the presence of the uterine flatus. Physometra may also result from retention of the menses, or of the lochial discharge. Baudelocque, Lisfranc, and others, have recorded cases of physometra in hysteric women, without having been able to detect any cause for it. May not, in these cases, a secretion of gas have taken place in the womb, such, for example, as occasionally occurs in the stomach of dyspeptic patients?"

Retro-uterine hematocoele is a complaint to which the attention of the profession has been drawn within the last few years by P. Nelaton, of Paris. Dr. Tilt is the only English author who has fully described the complaint in his valuable chapter on sanguineous pelvic tumors;* and Dr. Bedford gives the particulars of a case of a mild form of this not uncommon disease:

"Mrs. L—, married, æt. 34, the mother of four children, suffers from very severe pain in her back passage, and says she has a frequent desire to have an evacuation from her bowels, but passes very little. 'How long, madam, have you suffered from this pressure on your back passage?' 'For the last two months, sir.' 'How was your health previous to that time?' 'It was always good, sir.' 'Did anything occur two months ago to which you can in any way refer this pressure of which you speak?' 'Nothing, sir, except a fall I had.' 'How did you fall, my good woman?' 'I was coming down stairs, sir, with a tub of water, my foot slipped, and I fell down a whole flight of steps.' 'Were you much injured at the time?' 'No, sir, but I was terribly jolted.' 'How

* "Diseases of Women, and Ovarian Inflammation in relation to Morbid Menstruation. Sterility, Pelvic Tumors, and Affections of the Womb." 2d ed. Churchill, London.

soon after the fall did you begin to feel this pressure?' 'The next day, sir.' 'Were your bowels regular previous to the fall?' 'Yes, sir.' This case, gentlemen, is one about which it is impossible even to approximate an opinion without a minute vaginal examination. Pressure on the rectum may be the result of various conditions, such as retroversion of the uterus, prolapsion of the ovary or small intestine into the triangular fossa, a collection of hardened fæces, internal hemorrhoidal, and other tumors. [The patient was placed on the bed, and the professor proceeded to institute the necessary examination.] From the examination I have just made, it is obvious that the pressure on the rectum, and difficulty in defecation, are owing to a tumor in the fossa, between the intestine and uterus.

"The next question to be decided is, as to the particular nature of this tumor. That it is not the retroverted uterus, I am assured from the fact that the cervix of the organ is rather inclined backward while the fundus is thrown somewhat forward by the pressure of the tumor; and I am equally confident it is not a prolapsed ovary from the two following circumstances, 1st, there is no indication of any disease of either of the ovaries; and, 2dly, if the tumor were occasioned by the descent of a healthy ovary, which sometimes happens, it would be characterized by great mobility, which is not the fact in the case before us. The pressure is not occasioned by a collection of fecal matter, as I have ascertained by the introduction of the finger into the rectum. What, then, is this tumor? In my opinion, we have in the person of this patient an example of a most interesting form of tumor—I believe it to be a collection of blood, or what may be termed an hæmatocele: and from the position it occupies is entitled to the name of retro-uterine hæmatocele.

"The reasons for my opinion are these: 1st. The fall would be likely to produce an extravasation of blood. 2d. To the touch, the tumor is soft, elastic, immovable, and evidently contains fluid. If I am correct in this view, a most interesting question arises, What is to be done? Nelaton, in cases like these, recommends the use of the exploring needle in preference to incision, for the reason that there is more or less danger from hemorrhage if incision be had recourse to; and, moreover, he finds that the tumor often becomes absorbed; while, in other instances, the blood escapes through the rectum or the genito-urinary organs. 'Now, my good woman, if you will permit me, I will ascertain the true cause of your suffering, and will do all in my power to relieve you.' 'You may do anything you think best, sir.' 'That's a sensible woman, as full of courage as you are of common sense.' [The professor here introduced the index finger of the left hand into the vagina, and passed along the finger a small exploring needle, with which he penetrated the tumor, between the rectum and uterus, directing the needle upward. It was evident that the diagnosis was a correct one, for, as the tumor was penetrated, blood escaped.] You see, gentlemen, in the blood which passed from the sac as soon as it was entered, the best evidence of the accuracy of the opinion we had formed touching the nature of the tumor. I do not feel disposed, under the circumstances, to do more than introduce occasionally the needle for the purpose of allowing a small quantity of the blood to escape, for I have very little doubt that this, together with the action of the absorbents, will suffice to disperse the extravasated fluid. It will be proper, however, to keep the bowels in a soluble state, and, in order to accomplish this, I shall direct a pint of tepid water to be thrown up the rectum every night."

Dr. Bedford seems to have met with vascular tumors of the meatus urinarius more frequently than ourselves, for in large hospital practice we have only met with two cases in eight years; we therefore feel inclined to adopt Sir C. Clarke's first opinion relative to the frequency of the disease:

"Sir C. Clarke, when he first called attention to it, entertained the opinion that it was of rare occurrence. Subsequently, however, he changed his mind on the subject. My experience tells me that it is not so very uncommon, although I am satisfied it often eludes detection. I have repeatedly met with it, and this is the second case, which has presented itself at the Clinique the present session. This tumor is almost always accompanied by a mucous discharge, and its characteristic symptoms are excessive pain in sexual intercourse, in passing water, and in walking. The contact of the chemise is

productive of great suffering. In fine, the slightest touch gives rise to severe pain. Sometimes several of these excrescences will be detected within the urethra.

"*Treatment.*—No medicine which you can administer will have any effect. The only remedy is the removal of the tumor; this may be done by ligature, the knife, caustic, or scissors. I greatly prefer the latter. Take a pair of curved scissors, and remove the tumor completely, then touch the cut surface freely with caustic. This is all that will be necessary. Occasionally serious hemorrhage follows the removal, which you can check by the nitrate of silver, or caustic potash, together with ice kept constantly applied. It is also recommended to apply to the cut surface nitric acid, being careful to guard the surrounding parts. The actual cautery is sometimes resorted to not only to arrest the hemorrhage, but as a primary remedy, and I should think it an efficient agent for either purpose."

In our cases, after protecting the surrounding parts by lard, we have carefully touched the tumor with concentrated nitric acid. The application was repeated every week for some time, and the patients were ultimately cured.

A much debated question—whether hysteria is marked by unconsciousness?—is thus treated by the author:

"But there is one feature connected with hysteria to which it may be useful to call your attention—it is the loss of consciousness which sometimes supervenes in the attack. It has been seriously doubted whether in hysteria there is ever loss of consciousness, but on what grounds I am sure I cannot understand. To my mind, there is no fact more emphatically established than that women, laboring under an hysteric paroxysm, do lose for the time being all sense of the external world; while, again, you will find that this want of consciousness is only partial. But there is a circumstance which has been well observed by authors, and which you, too, will recognize in practice, it is that in hysteria the mind does not become lost at the commencement of the attack, but the unconsciousness is always gradual. This constitutes a very important diagnostic symptom between hysteria and epilepsy, in which latter, one of the very first and most prominent symptoms is immediate and complete loss of consciousness. In questioning this girl, you will remember how particularly I interrogated her on this point. My question was, 'Do you always lose your consciousness in these attacks?' She replied, 'Not when the fit first comes on, sir, but I do after some time.' It may, however, be observed, that this derangement of the intellect is not a uniform accompaniment of hysteria."

The preceding extracts are amongst the best passages of a large volume which will doubtless be useful to American students. And though we cannot place it by the side of the lectures of Velpeau, Lisfranc, or Dupuytren, Dr. G. Bedford's reputation already stands on good grounds; and his love of his profession will, without doubt, at some future day, give us the opportunity of awarding unqualified praise to the product of his pen.

On the Disorders of Infantile Development, and Rickets, &c. By A. SCHOEPP MEREL, M.D. (Churchill, Burlington Street, 1855.)

The wholesale hospitality we give to the French refugees impelled to our shores by the tyranny of one or by that of many, by an Edict of Nantes, or by a reign of terror, has been eminently conducive to our national prosperity. If, instead of seeking to work mischief, exiles will only exert themselves according to their calling in any useful sphere, they are welcome to take root amongst us, and such men as Dr. Merel will be always welcome. A revolutionary convulsion throws him from Pesth, where he was in good practice, into smoky Manchester. Undaunted by the change, he continues the study of medicine as a science, and its practice as an art, and after a time he writes a book, not however, to fan the embers of sedition with the hot blasts of revenge, for instead of attacking the Emperor of Austria he judiciously wages war with the causes of Rickets, with the influences contaminating the air of Manchester, with the injudicious feeding of children of the lower classes, and with their overfeeding by the wealthy, thus giving us a valuable essay on very important subjects. We

say *essay*, because Dr. Merei only publishes it as an *essay*, being fully aware that certain portions of the work require to be filled up, but the work is highly suggestive, and deserves an attentive perusal.

With regard to the theory of Rickets, the author adopts Virchow's statements.

"According to this acute and indefatigable observer, all the same vegetative changes are going on in the rachitic bone which in the normally conditioned bone prepare the growth, with this exception only: that in the former no phosphate of lime is deposited. He distinguishes in the growing bone *four strata*: 1st, the spongy, consisting of bars (Balken) of normal bone structure; 2d, the yellowish spongioid stratum, with groups of large cartilage cells; 3d, the bluish stratum, with large-celled cartilage growth; and 4th, the common cartilage.

"Now, in the normally growing bone an *endogenous* formation of cells takes place in the cartilage stratum; medullary spaces (Mark-Räume), and bone corpuscles are formed; and all these preparatory processes are observed also in the rachitic bone, but without subsequent deposition, or with insufficient deposition, of phosphate of lime, therefore, without ossification of these structures.

"To complete this theory we may safely add the remark, that in bone as in other organic structures a continuous vital movement obtains between the functions of absorption and deposition: so it is obvious that at a high stage of rachitism the already deposited phosphate of lime becomes dissolved and absorbed without an adequate new supply of this crystallizable salt."

After comparing his experience at Peath with that obtained at Manchester, and with information derived from many medical men practising in this country or in foreign parts, Dr. Merei arrives at the following conclusions:

"From the accounts referred to, corroborated by some others I have received of a more general character, it appears, firstly—that rickets is less frequent in English towns than in many of those of the Continent; and altogether of rare occurrence in Scotland and Ireland: consequently the assumption, that the development of this disease is favored by northern elevation and damp climate is thus invalidated. From the facts alluded to, however, it cannot be inferred, that in those countries and localities where rickets is seldom observed in its well-marked stages, also those slighter features of the rachitic tendency along with retarded developmental vegetation which are included in the accounts of Manchester, and which so commonly are overlooked—are of rare occurrence.

"Secondly.—Rickets occurs under a great variety of climates, and the medico-statistical data which we possess at present are insufficient to state what precise kind of climate disposes especially to this disease.

"Thirdly.—Marine atmosphere is highly favorable to infantile development, and consequently to the prevention of rachitism.

"Fourthly.—Rickets, *where it extensively exists*, is everywhere observed in a preponderating proportion among the poor; and it seems to be considerably more frequent among the wealthy on the Continent, than among the corresponding classes in England, with the exception perhaps of a few towns.

"Fifthly.—Improper diet *alone*, under the influence of a pure atmosphere, is insufficient to produce rachitism.

"Sixthly.—Impure air (an over-carbonized atmosphere) of overcrowded and badly ventilated quarters and dwellings, constitutes the most powerful cause of the disorder both in continental countries as well as in England.

"Seventhly.—The influence of unwholesome air is sufficient to cause rickets, in spite of the most wholesome kind of infantile diet; this is proved by the frequency of rickets amongst the educated and wealthy families of continental towns, and to some extent among those of Manchester.

"Eighthly.—Hereditary influence is powerful enough to produce rickets under local and social conditions even the most favorable to infantile development."

Notwithstanding the swelling of the joints, the curving of the bones, children sometimes look so well and eat so much that the deluded parents cannot reconcile such a state of things with a fearful disease; but our author remarks:

"The careful practitioner, on noticing the phenomena above mentioned, not satisfied with the favorable opinion entertained by the parents, on attentive examination will find: that with the retarded ossification of the fontanelle, and the

enlarged wrists and ankles, there is combined therewith some other functional derangement; and he will feel it his duty to draw the attention of the parents to the existing morbid tendency, till then unnoticed. Children presenting a degree, however slight, of that condition of the skull and joints above named, will be found to present the following phenomena in the aggregate, or some of them: avidity for farinaceous articles, bread and potatoes, immoderate eating without due increase of muscular power; the alvine evacuations irregular, in some instances confined, in others greatly abundant and rather liquid, of an unhealthy, variable appearance, sometimes clay-colored, sometimes dark brown and of a most offensive ammoniacal odor; the urine, in some instances having a slightly brownish tint, and acting strongly upon the blue test-paper, and forming after six or more hours (if not sooner) a sediment, either of a red lithic character, or whitish and mucous; the power of walking of these children, if they are able to walk at all, is neither easy nor firm, and the little strength they possess in proportion to the bulk of their body, and incapability of adequate muscular exertion, are proofs of their ailment.

"These phenomena—some or all of them—are certainly discoverable in nine out of every ten cases of the slight, often unnoticed rachitic tendency; yet, in the lower ranks I do not think that once in ten such cases are the parents aware of, or pay any attention to, the disorder; and so far as my experience goes, in Manchester as well as in my former position, even among wealthier ranks, physiological and hygienic notions—such as ought to form part of general education, and to be regarded as one of Lord Ashburton's 'common things'—are as yet so little diffused, that we but too frequently meet with irreparable consequences of the want of knowledge, as regards essential points, on the physical management of children.

"Another set of symptoms connected with the above mentioned slight degree of disordered ossification, has direct reference to imperfect hæmatisation, and consists in this: most of these children have a feeble and frequent pulse, and upon auscultation we perceive the chloro-anæmic murmur, particularly on the right side of the neck. These symptoms, however, are less constant than the above-mentioned, and less exclusively characteristic of rachitism."

Pure air, cold sponging, are insisted on as preventives, and with regard to remedial measures, the following passage faithfully asserts upon what remedies we can mostly depend:

"*Internal remedies.*—Remedies calculated to fulfil the chemical indication (to prevent and neutralize acidity) are generally inefficacious in this disorder; and remedies intended to improve one or other of the abdominal functions are seldom of essential use, if not in the long run hurtful. There are instances, of course, in rachitic infants, as well as in others, where an accidental and temporary derangement of these functions will be improved by rhubarb and magnesia, or by minute doses of aloes (from gr. $\frac{1}{4}$ to $\frac{1}{2}$ p. d.), or a brisk aperient; but to insist upon the continued use of mercurials to change in these cases the clayish appearance of the stools into a healthier quality, is an indication ill founded in theory, contradicted by practical experience. Such constitutions as rachitic children possess are certainly not to be subjected to the continued action of mercury; and the condition of the blood as peculiar to these habits will be a constant source of disordered abdominal secretions, until it shall have been improved by constitutional remedies.

"The internal remedies—in my opinion the *only* remedies—directly and powerfully beneficial in rickets, are: *cod-liver oil, iron, and quinine.* They have been mentioned already in these pages as being of great value in improving retarded developmental vegetation; in the declared rickets they are imperatively required. The value of *cod-liver oil* is especially acknowledged by credible authorities, among whom Trousseau and Bochart declare it to be the most important remedy in this disease, and almost infallible in its curative effects."

This being Dr. Merei's opinion of the value of cod-liver oil, he has used it extensively in practice, and the result of his comparative trials of the different kinds of this medicine, now before the public, will therefore be duly appreciated.

"Lately I have on several occasions been struck with astonishment on seeing to what extent commercial men, founding their enterprise upon certificates said

to have been obtained from a scientific authority (Dr. de Jongh) and published by several English houses, have succeeded in imposing upon the credulity of the public as regards the pretended superiority of the light brown cod-liver oil above the English. I feel that it would be unpardonable on my part should I hesitate frankly to express my opinion on this subject, founded upon a *comparative* experience with both kinds of oil, both at Pesth and in Manchester, upon a scale most probably larger than most others have had opportunities of enjoying.

"I have ordered the dark and the light brown cod-liver oil to several thousand children affected with different chronic ailments in the children's hospital of Pesth, and to several thousands also in private practice in that town; and during the last four years in Manchester, I have prescribed the English variety to more than two hundred children. The result of my experience is this: that the curative effects are obtained by either kind if it is found to agree with the patient's digestive organs,—but, as was already mentioned, the Norway-oil is less agreeable to the palate and stomach, than the English. And this becomes self-evident upon considering the processes by which they are obtained,—namely, the former being the product of the cod's liver, after having been left for some time exposed to the air and sun, and thus allowed to undergo a degree of fermentation,—the English (Newfoundland) is directly obtained from the fresh livers of the cod, chopped and enclosed in a bag, and subjected to a vapor bath not exceeding 140° Fht., to avoid any kind of decomposition.

"I have seen it stated, that the *light brown cod-liver oil is four times as active as the English*. Here we may be allowed to ask: what is the active principle of cod-liver oil in the disorders, atrophy, vegetative weakness, and rickets? Nobody has hitherto solved this question satisfactorily. Other oils and fats have not the same effect as cod-liver oil. I feel confident in stating this, from the numerous extensive comparative experiments which I have made with olive oil, goose-fat, and butter; and to ascribe its curative effects to the minute proportions of iodine contained in it—as some physicians and pharmacologists have done—is a most glaring mistake, since atrophic and rachitic children are never benefited by, and most generally do not bear, even moderate doses of any iodine preparation whatever.

"Judging practically, therefore, after a fair trial of both kinds, I can conscientiously state, that on an average no larger doses are required of the English cod-liver oil than of the light brown, to produce in the same space of time the same result. From two tea-spoonfuls to a large table-spoonful, in rare cases more (according to age, and the nature or severity of the case) as a daily dose, will commonly after a week or two show some good effects, and improve the rachitic as well as the atrophic disposition. Even if it were true, that the identical curative power is more concentrated in the light-brown than in the English oil, the more palatable and mild qualities of the latter would still decide in its favor.

"In conclusion—cheapness is the only reason why the light-brown oil may be preferred to the other for those patients who are limited in their means, and in case they are able to take and to digest it well."

We hope to meet Dr. Merei again in a more extended field of observation, as his sound judgment and opinions will carry weight when a longer residence in this country will more fully have enabled him to compare the results of his practice in the two very different climates of Pesth and Manchester.

On Asphyxia Neonatorum. By Dr. J. HAMILTON, of Falkirk. ("Monthly Journal of Medicine," May, 1855.)

The experience of Dr. Hamilton affords abundant proof that the lives of a great number of children may be saved by the timely use of the forceps and by persevering efforts at artificial respiration. The proof is that the child was born alive in 416 cases in succession. Some of these children lived for only a short time, from being somewhat premature, from malformation, or from other causes, but they were all born alive. Now, seeing that there is a mortality of 1 in 20, or at most of 1 in 40 in the practice ordinarily pursued, this is certainly a great fact.

The chief peculiarity of Dr. Hamilton's practice is in shortening the second half of the labor process by means of the forceps. The instrument was applied 66 times in 467 cases—not quite 1 in 7—without the loss of a single child. This is a very different practice to that ordinarily pursued, and the result is no less different. Indeed there is reason to believe that this instrument is not used in ordinary practice oftener than once in 200, 300, or even 700 cases, and that the mortality in the cases in which it is used is as high as 1 in 4. Others trust to ergot. Dr. Hamilton rarely ever uses the drug. It is not necessary, however, that we should refer more particularly to this part of Dr. Hamilton's practice, for our readers will find it noticed at length in a former report. ("Abstract," xvii.)

The present paper dwells at some length upon these matters, but its principal object is to direct attention to the fact that many children, apparently dead, may be resuscitated by means of artificial respiration long after the time when the attempt is generally abandoned. Dr. Hamilton bases his remarks upon a case which did not end favorably.

"About ten minutes before 7 P.M., Mrs. C— was delivered of a large male child. A knee presented, and to effect delivery considerable force was required, though the time occupied in passing the head through the pelvis was not very protracted. Even before one leg had passed from the vagina, meconium was voided very copiously, and when the child was born it showed not the slightest movement or trace of sensibility. The usual appliances of rubbing the breast with spirits, plunging the body alternately into cold and warm water, &c., were rapidly had recourse to, but apparently without producing any effect. As a last resource, artificial respiration was employed. In a short time a slight pulsation of the heart became perceptible, and gradually increased in strength, but this was the only motion which could be observed. After having continued the artificial respiration for an hour and a half, a slight tremulous motion of the abdomen was noticed, which at first seemed to be merely the effect of the heart's pulsation propagated downwards, but which, after another half hour, was distinctly seen to be produced by very weak and rapid respiratory movements. Along with this improvement, the color of the lips, previously somewhat livid, became of a red, natural hue. In three hours the temperature was good, the pulsation of the heart was strong, and the respiratory motions extended to the upper parts of the chest, and could be continued without the use of inflation for a much longer time than at first. The movements of the heart and chest continued in nearly the same state for another hour, when they began gradually to fail, and they ceased at 11 P.M., after the artificial respiration had been continued for rather more than four hours. No deep inspiration, or other manifestation of sensibility than has been mentioned, was observed during the whole of this period.

"Though the means used in this instance did not save the child, the marked improvement that for a time took place, made me very sanguine at one period that such would have been the case; and, under more favorable conditions, they probably would have been successful. In a good number of other cases, indeed, the same means as were here employed have perfectly succeeded, and in some instances when further perseverance seemed all but hopeless. In the management of the artificial respiration a few circumstances struck me as important, and I shall therefore shortly advert to them, as it becomes a matter of the utmost moment, in such cases as this, that the most effectual means for recalling sensibility should be clearly understood and promptly used.

"For convenience, in inflating the lungs, I had the child laid on the front of the bed, the arms and legs, and as much of the body as possible, being wrapped in warm flannel, which was changed at short intervals, by a person in attendance; under the back part of the neck a pledget of flannel was placed, so as to throw the head gently backwards, and the front of the neck slightly forwards, as I found that the air entered easiest into the lungs in this position. With my left hand I kept steady the head and closed the nares, and with my right I grasped the thorax, so as to be able to compress it—principally in a lateral direction. The air being expelled from the lungs by the right hand, I applied my mouth to that of the child, and inflated the lungs, at the same moment that the elasticity of the ribs was brought into action by the removal of the right hand's pressure.

This procedure was regularly repeated, and a certain rhythm, if I may so speak, in the movements, after a short practice, was attained, so that the fatigue, at first considerable, became afterwards greatly lessened.

"As has been mentioned, the heart's action became visible shortly after inflation, in this way, had been begun. In about half an hour, however, the strength of its beat began manifestly to fail, so that I feared it was about to stop altogether. Under these circumstances, I tried what effect pressure on the sternum would have, when I immediately found that the action of the heart became decidedly stronger. To satisfy myself that I was not deceived in this, I repeated the process several times with a like result, and, being assured of the fact, during the remainder of the four hours I combined the two movements described, in the following manner:—I first inflated the lungs with my right hand and mouth, three or four times consecutively, at short intervals, and then tried to imitate the motions of respiration by exerting pressure on the lower third of the sternum, and again quickly removing it, fifteen or twenty times in rapid succession. Whether the pressure on the sternum increased the heart's action by directly stimulating it, or by more thoroughly imitating the respiratory process, or partly in both ways, I do not undertake to say, but the beneficial effect of conjoining the two movements seemed to me manifest. Perhaps, by acting as I did, I, to a certain extent, imitated what the child, had it possessed a greater amount of sensibility, would have done in like circumstances; for we notice, when a new-born child is beginning to recover from a state of asphyxia, 1st, that it makes deep inspirations at considerable intervals; while, 2d, small rapid respiratory movements may be plainly noticed going on during these intervals. The rest, also, which this change in the manipulations allows to the operator, is a matter of some moment, where inflation has to be carried on for any length of time.

"In order to satisfy myself as to the comparative efficiency of these procedures, in introducing air into the lungs, I next day got the permission of the friends to make a few experiments on the body of the child. I first tried the effect of compressing the nares and blowing into the child's mouth, after the chest had been compressed, as previously described. When this was done, even though the muscles of the chest had become rigid, the full inflation of the lungs became obvious, and the sound produced by inflation, as in using a hare's lungs, could be distinctly heard. I then fixed into the trachea a short tin tube attached to a long gutta percha tube, which latter had connected with its other extremity a bent glass tube, partly filled with water. The motion of the water, in this little apparatus, showed, with great delicacy and precision, the effect of movements impressed on the ribs or sternum, and the following are the results obtained: 1st, the largest amount of air forced from, and again taken into, the lungs, was found to be produced by pressing the ribs laterally, as I did before inflating the lungs of this child; 2d, pressure on the lower third of the sternum had a less, though still a decided effect on the air contained in the lungs; and my impression, after making this experiment is, that the much greater number of movements that can, in this way, be given to the chest, make it, *per se*, nearly, if not altogether, as powerful a means as the first for introducing fresh air into the lungs; 3d, forcing upwards the diaphragm, by making pressure on the abdomen, produced on the water in the tube little or no effect.

"I have mentioned that, at the end of three hours, the pulsation of the heart was vigorous, and that the respiratory motions could be noticed to extend to the upper part of the thorax. I then began to use inflation less frequently; and, as the position of the child on the front of the bed was somewhat inconvenient, I thought I might venture to remove it to a table near the fire, on which were placed warm pillows and flannel. Almost immediately upon making this alteration, I noticed that the respiration became less distinct; and in a short time the change was so decided as to compel me to replace the child in its former position; after which, both the heart and chest began shortly to move nearly as before. Perhaps the cause of this unfavorable change may have been that, in the new position, the air did not get access to the lungs so easily as formerly, although I did not observe any very decided difference in this respect; but there was also another circumstance which I suspect might exercise some influence in producing the unfavorable change. While the child lay on the bed, the head and the upper

part of the body occupied a slightly dependent position ; whereas, on the table, the whole body was placed horizontally. Might it not be, that, in the former position, the arterialized blood found its way more easily to the nervous centres, and thus preserved a greater amount of sensibility? Whatever may have been the cause, the fact referred to shows how slight are the alterations, under such circumstances, which may produce important differences in the result. In this respect, I recollect, many years ago, while assisting Dr. G. C. Holland in performing experiments on artificial respiration in rabbits, in connection with his work on 'Animal and Organic Life,' being struck with the fact, that even such a slight circumstance as occasionally altering the position of the animal, had some effect on the experiment. If, for example, while the lungs were being inflated, the action of the heart became weak, the posterior extremities had merely to be elevated to cause the heart to be immediately, for a time, stimulated into vigorous action. At the commencement of operations, in the case I have been relating, I kept this observation in mind, and perhaps the alterations of position which were at that time frequently made, assisted in keeping up the then faint action of the heart.

"It is hardly necessary to say that, before beginning the inflation of the lungs, I introduced my finger into the pharynx for the purpose of clearing away any mucus which might be lodging at the top of the windpipe; and also, that the inflation itself was performed very gently, in order to avoid the risk of rupturing the air-tubes. I may remark, however, that the introduction of the finger into the pharynx may have some effect in rousing the dormant sensibility in such cases, as we are by this means acting upon parts peculiarly susceptible of being powerfully stimulated. To increase this stimulus, and also in the hope that a small portion might find its way into the stomach, or be absorbed, I occasionally, during the continuance of inflation, dipped my finger into spirits, and rapidly passed it down to the top of the œsophagus."

IV.

REPORT ON PHYSIOLOGY.

1. *On the Extensive Diffusion and Frequency of Starch-Corpuscles in the Tissues of the Human Body.* By THOMAS ALBERT CARTER. ("Edinburgh Medical Journal, August," 1855.)
2. *Corpora Amyloidea in the Human lens.* By Mr. R. TAYLOR. ("Pathological Transactions," vol. vi.)

THE facts which are here presented are of great interest, as illustrating the intimate connection which exists between the animal and vegetable world by showing that starch is a proper constituent of animal bodies. We have already referred to this important point ("Abstract," xix), and this reference must suffice.

In his paper, Mr. Carter tells us why the presence of starch-granules so long escaped the notice of microscopical observers; and his explanation is no doubt the correct one. It is this: It is well known to microscopists that fatty matters, frequently in the form of oil-globules, are almost invariably interspersed among the morphological elements of which the various organs and tissues are composed. Now to these globules the animal starch-corpuscles bear a very marked resemblance, not merely in general form, but likewise in refractile properties. Can it then be looked upon as a matter of surprise that the two have been confounded by those who have neither by chemical nor other means endeavored to discover their nature? And in some instances when recognized, as they often have been in the urine, they have been considered either as fraudulent additions to, or accidental admixtures with, this excretion; possibly with correctness in some instances, though by no means in all.

Mr. Carter also states that he has found starch-granules in the cerebrum, cerebellum, liver, lung, spleen, kidney, in the striped muscle and areolar tissue of the sheep; and in the liver, lung, and ligamentum nuchæ of the ox. So that their presence is by no means peculiar to man. He has also found them in healthy blood drawn from the finger, in pus, cancer-juice, chronic lymph, bronchitic sputum, ichthyosis scabs, tubercular matter from the lung, and in the urine of persons suffering from Bright's disease, dyspepsia, acute articular rheumatism, pneumonia, &c.

In these inquiries two distinct varieties of starch-corpuscles, were met with—the one (described by Busk) resembling wheat-starch; the other, and rarer kind, corresponding in every particular with that derived from the potato. In dimensions they vary from the $\frac{1}{16}$ th to the $\frac{1}{80}$ th of an inch, the usual size being the $\frac{1}{80}$ th.

The following are the facts; they were taken without any selection, and they are given in the order in which they were observed:

"*Observation 1.* A man, N., æt. 39 years, who died of phthisis pulmonalis, complicated with albuminuria.

"A micro-chemical examination of the liver, which was of twice its ordinary weight, and presented in a marked degree the characters of waxy degeneration, revealed the presence of starch in great abundance. One demonstration exhi-

bited fifty-two bodies of the ordinary size, adhering to, or imbedded in a mass of transparent homogeneous tissue.

"In the spleen and kidney, which were also 'waxy,' starch was found, abundantly in the former, in the latter somewhat sparingly.

"*Obs. 2.* A woman, J. B., æt. 59 years, who died of apoplexy.

"The tubular matter of the cerebrum, immediately surrounding the apoplectic clot, was subjected to an examination, and in it were found, associated with numerous compound granular cells, numbers of starch-corpuscles. This observation does not apply to the healthy portions of the same brain, for, after a prolonged search, none could be detected. An ordinary amount was observed in the spleen, kidney, and liver of this subject, all of which appeared perfectly normal.

"*Obs. 3.* A female, M. R., æt. 24 years, who died of phthisis pulmonalis.

"In the liver, which was somewhat waxy and slightly enlarged, were found starch bodies of irregular form, as if developed in masses under pressure.

"The spleen yielded a few. This, like the former organ, was in some degree waxy.

"They were very numerous, and of large dimensions in the kidney, many attaining to the 1-400th part of an inch in diameter.

"I noticed in the pancreas and mesenteric glands of this subject, numbers of corpuscles, generally of oval form, measuring about the 1-400th of an inch in their longest, and about half that in their shortest diameter. The hilum was placed near one extremity, with a series of concentrated ellipsoidal markings surrounding it. Moreover, when seen by polarized light, they exhibited the four black or colored radii diverging from the hilum; in fact, they were in every respect identical with the amyllum of the potato.

"*Obs. 4.* A female, J. H., æt. 23 years, who died of phthisis pulmonalis.

"Starch was found in the liver, kidney, spleen, pancreas, mesenteric glands, and supra-renal capsules, all of which organs were healthy, with the exception of the mesenteric glands, these being slightly enlarged; also in an indurated tubercular mass from the lung.

"*Obs. 5.* A man, J. B., æt. 38 years. The immediate cause of death unknown. The heart and larger vessels, however, were diseased.

"In the liver (slightly enlarged, but in other respects healthy), kidneys, supra-renal capsules, spleen, corpora striata, pituitary body, and Pacchionian glands, starch was found. None could be discovered in the pancreas, after a very careful and prolonged search. This organ was very flaccid, and apparently diseased.

"*Obs. 6.* A man, Y., æt. 17 years, who died of general anasarca.

"The liver of this subject was congested, and to a small extent fatty; the spleen rather pulpy; both exhibited the usual amount. The pancreas, which was flabby, yielded a very small quantity. In a mass of degenerate pus found adhering to the peritoneal surface of the bladder, and in a chronic pericardial exudation matter, they were also present.

"*Obs. 7.* A boy, P., æt. 14 years, who died of apoplexy.

"The liver, spleen, kidneys, supra-renal capsules, thyroid body, tonsils, and brain, contained starch in greater or less quantity. The kidney, in this case, was the viscus in which they were principally developed, both as regards number and size. By mensuration, I ascertained that one of them exceeded the 1-200th of an inch linear. All the organs appeared quite healthy.

"*Obs. 8.* A youth, æt. 17, whose death was occasioned by an enormous fibro-nuclear tumor growing from the abdominal parietes, and general anasarca.

"The existence of starch was determined in the liver, spleen, supra-renal capsules, and pancreas; in the last-mentioned organ the rarer variety. It was found in all parts of the tumor with the greatest facility.

"*Obs. 9 and 10.* A female, E. G., æt. 16 years, and a man, A. C., 43 years of age, both of whom died of phthisis.

"The following organs, which appeared healthy in both, contained the ordinary quantity; the livers, kidneys, pancreatic and mesenteric glands. The supra-renal capsules of A. C. were examined, and with a like result.

"*Obs. 11.* A man, æt. 33 years, who died of jaundice, together with œdema and erysipelas of the lower extremities.

"All the organs mentioned in the two preceding cases were examined, and positive evidence of the presence of starch obtained; but the quantity in each was excessively small, more especially in the pancreas. With the exception of the liver, which was in an incipient state of cirrhosis, and deeply impregnated with the coloring matter of the bile, all the viscera were normal.

"Among, and also within, the wavy bundles of fibrous tissue from the mesentery, starch grains of the ordinary dimensions were scattered with tolerable regularity, but for the most part at rather wide intervals.

"*Obs.* 12. A child three weeks old. Cause of death unknown.

"The liver contained a more than ordinary quantity; the kidney, spleen, and pancreas, the usual amount.

"*Obs.* 13. A man, D. L., æt. 25 years, who died of diabetes mellitus.

"Starch was of excessively rare occurrence in the liver of this subject; less rare in the pancreas; and the general amount observed in the spleen, kidneys, mesentery, and the white and gray matters of the cerebrum. Little was seen in the cerebellum."

Mr. Taylor's case reveals the presence of starch-granules in the human lens. It is as follows

"The patient, a woman upwards of 70 years of age, came under my care at the Central London Ophthalmic Hospital, for inflammation of the eyeball, of a peculiar and unusual character, which commenced in the cornea, and thence extended backwards to the deeper-seated tissues. Through the small portion of the cornea that retained its transparency, the anterior chamber was seen to be filled with a body of a yellowish-white color, which almost completely concealed the iris.

"As there was no hope of the restoration of vision; as the woman suffered constant severe pain, which had seriously impaired her health; and as the other eye was beginning to suffer sympathetically, I removed the cornea, and permitted the escape of the crystalline lens, with a small quantity of the vitreous humor. This operation gave complete and permanent relief.

"It was found that the anterior chamber was completely filled by a cake of lymph, moulded to the form of the cavity, and incorporated with the iris, little trace of which remained, except pigment.

"The lens was examined by Dr. Kirk, who has favored me with the following report:—'The parts examined consisted of the lens with its capsule. The anterior capsule had been considerably lacerated; the posterior capsule was continuous and undisturbed. The structure of each was normal. The lens was hazy, and of a deep amber color. The surface was soft, and the superficial lens-fibres were normal. The nucleus was rather dense; its fibres very unequal in size, much atrophied, and granular in appearance.

"'Immediately under the capsule, and imbedded in the superficial lens substance was found a layer of peculiar bodies, which varied much in form and size. The predominant form was the spheroidal, more or less elongated; sometimes larger at one extremity than at the other. Many were united together linearly, as though they had sprouted from each other; several had linear prolongations; others were of most eccentric forms. In a few, a series of concentric markings was evident; but in most they were absent. Under the polarizer, several of the larger bodies presented a distinct cross; in the smaller ones the cross was faintly marked, or altogether absent. Tested with tincture of iodine, they assumed a deep blue color, gradually increasing in intensity till they became opaque.

"'In making the examination, every precaution was taken. Distilled water was used, and the covering glasses were carefully cleansed. The bodies were first observed on the anterior surface, where the capsule was torn, and where it was possible that foreign matter might have found entrance; but doubt was removed on finding them in still greater abundance under the posterior capsule, and imbedded in the lens substance.'"

Muscular Contraction, a Physical Phenomenon; a sketch of the argument, with alterations and additions. By CHARLES BLAND RADCLIFFE, M.D., L.R.C.P., Assistant-Physician to the Westminster Hospital, &c. ("Medical Times and Gazette," 16th, 23d, and 30th of June, 1855.)

In the present article it is proposed to give a summary of the principal arguments which seem to show the necessity of a complete revolution in the opinions respecting muscular contraction. This summary is divided into four parts. In the first part, it is proposed to show that muscle is not stimulated to contract by any of the commonly reputed stimuli,—electricity, nervous influence, blood, light, heat, and the rest. In the second part, it is proposed to examine into the nature of muscular contraction, and point out reasons for supposing that this contraction is nothing more than a passive physical consequence of the molecular attraction of the muscle. In the third part, it is proposed to consider the special muscular movements which are manifested in the coats of vessels, and to show, not only that these movements can be explained on no other law than that which has been stated, but that the law gives the clue to the interpretation of "capillary motion" and the rhythm of the heart. In the fourth part, it is proposed to glance at the pathology of muscular contraction, and show that this is in harmony with the physiological premises.

I. In this part, the object is to show that muscle is not stimulated to contract by any of the commonly reputed stimuli,—electricity, nervous influence, blood, heat, and the rest.

1. *Of Muscular Contraction in relation to Electricity.*—Living muscle is the seat of electrical currents which proceed from the ends to the sides of the fibres, and which may be traced, not only in the entire muscle, but in the individual fibres. These currents continue during life, and are not finally extinguished until the occurrence of *rigor mortis*. They are designated under the general name of "muscular current," and they will be so designated here.

The muscular current continues during life, but it does not always continue at the same pitch of intensity. It changes during muscular contraction. Matteucci, who first directed attention to this subject, thought it became stronger at this time. Du Bois-Reymond ("Untersuchungen über Thierische Electricität," Berlin, 1848), on the contrary, first thought it became weaker, and then doubted his original conclusion. The facts, however, are sufficiently simple, and his conclusion need not have been doubtful.

If a living muscle be connected in a proper manner with the galvanometer, the needle immediately reveals the muscular current by diverging to a certain extent from zero; and this it does until contraction is induced, when it immediately moves to the other side of zero. The needle, that is to say, is acted upon by a *reverse* current during contraction. There is no doubt about this, but there is doubt about the origin of the current. Is it in the muscle or in the instrument, for it may be in either or both? This question is answered by testing separately the condition of the muscular current during rest and during contraction (by breaking the connection and depolarizing the galvanometer between the two experiments); and the answer is, that the needle moves in the *same* direction during contraction as it moved during rest, but not to the same distance from zero. In other words, the muscular current is *weakened during contraction*, but not changed; and hence it follows that the backward movement of the needle during contraction in the former experiment was due to the secondary *reverse* current which traverses the coil of the galvanometer upon the diminution of the current which had previously passed from the muscle through the coil.

Judging from the needle of the galvanometer, then, the muscular current appears to be *weakened during contraction*, and why then does Du Bois-Reymond doubt a conclusion which appears to be so obvious? He doubts, because the phenomenon of "secondary contraction" (which is induced in a second muscle by placing its nerve in a certain manner upon the muscle which is being made the subject of experiment) appears to reveal the presence of certain *changes* in the muscular current of the primary contracting muscle which are not revealed by the needle of the galvanometer. Now, certainly, the "secondary contractions"

are due to certain *changes* in the muscular current of the primary contracting muscle. All are agreed about this. But what is the nature of the change? Du Bois-Reymond argues that the "secondary contractions" could not arise if the muscular current (which causes them) remained *constant*, and he therefore concludes that there must be certain *oscillations* in the current during contraction, although the sluggish needle of the galvanometer gives no evidence of them. But this is begging the whole question, as will be seen presently.

The commonly received opinion respecting the action of artificial electricity upon muscular contraction is that there is no contraction so long as the current is constant, and that contraction immediately follows whenever the current rises or falls in any manner. Is it so? What are the facts, and is this their significance?

When an artificial current is passed through the leg of a frog in a direction opposed to that of the muscular current of the limb, there is a *strong* contraction on making, and a *slight* contraction on breaking, the circuit, and there is *no* contraction during the passage of the current. In other words, there is a *strong* contraction at the moment when the artificial current neutralizes and is neutralized by the muscular current; there is *no* contraction when the artificial current prevails and is passing through the muscle; and there is a *slight* contraction when the artificial current is suspended. This latter contraction is less marked than the other, and this may well be, for the slight reverse current, which must be set up in the muscle on the suspension of the primary artificial current, passes in the same direction as the muscular current; and because this reverse current is too feeble to interrupt the re-establishment of the muscular current, the muscular current resumes its action with such rapidity that there is no time for any marked degree of contraction. In a word, the simple fact appears to be that contraction is absent when electricity is manifestly present, and present when electricity is in all probability absent.

When, on the other hand, the artificial current is passed through the leg of a frog in the same direction as the muscular current, there is a *slight* contraction on making, and a *strong* contraction on breaking, the circuit, and there is *no* contraction during the passage of the current. There is still *no* contraction while the muscle is acted upon by the full force of the artificial current; and there is a *strong* contraction when the artificial current is suspended, and when the reverse current which is set up on this suspension must, for the time (the two currents being contrary), neutralize and be neutralized by the muscular current, which muscular current recovers itself when the artificial current is suspended. But what of the *slight* contraction which occurs on making the circuit,—when, that is to say, the artificial and natural currents coincide, and when, apparently, they ought to intensify each other? This is, indeed, a difficulty, but the explanation appears to be that the two currents do not intensify each other, although they coincide in their direction; but that the artificial current, being the stronger, suspends the muscular current, by altering for the time that definite molecular arrangement upon which the muscular current depends. In this case, therefore, the contraction is coincident with the moment of suspension, the contraction being slight, because the artificial current establishes itself without having to encounter any direct opposition from the muscular current. In this experiment, then, as in the other, there is no sufficient reason for referring the contraction of the muscle to the stimulus of electricity, and the rule still appears to be that contraction is absent when electricity is present, and present when electricity is absent.

It is the same also if the artificial current be passed across the muscular current, for the contraction still happens on making and breaking the circuit, and not during the passage of the current. There is *no* contraction, that is to say, while the muscle is acted upon by the artificial current; there is contraction before the artificial current is established, and at the moment when this current is conflicting with the muscular current; and there is contraction before the muscular current is re-established, and at the moment when the returning muscular current is conflicting with the reverse artificial current.

The fact, however, which is more conclusive than any other as to the influence of artificial electricity upon muscular contraction has just been furnished

by M. Eckardt ("Grundzüge der Physiologie des Nervensystems," Giessen, 1854). *It is that a tetanized muscle is relaxed by the passage of a constant current of electricity.* This fact is, indeed, an *experimentum crucis*, when taken in connection with the facts already cited. These have shown that contraction is absent when electricity is present in the muscle; this shows that contraction must cease if electricity be imparted.

It would thus appear that the opinions generally held respecting the action of electricity upon muscle are not tenable, and that it is not enough to say that there is no contraction so long as the current is constant, and that contraction immediately follows whenever the current rises or falls in any manner. On the contrary, the simple facts appear to be that contraction is absent when the natural or artificial currents are present, and that contraction is only present when the muscular current is in some degree absent. Nay, so antagonistic is the current to contraction, that it even dispels it when present. And if this be the case, then the conclusion which Du Bois-Reymond has drawn from the phenomenon of "secondary contraction" falls to the ground, for all that is necessary to the production of this phenomenon is, not that there should be *oscillation* in the muscular current of the primarily contracting muscle, but simply that this current should become *weakened*, so that the position of the needle of the galvanometer and the phenomenon of "secondary contraction" alike point to the same fact, and that is a *fall in the muscular current during contraction*.

—In no point of view, then, does muscle appear to be stimulated into contraction by electricity. On the contrary, the only safe conclusion which can be drawn from this intricate evidence is altogether opposed to this idea. It is that muscular contraction is antagonized by electricity.

2. *Of Muscular Contraction in relation to Nervous Influence.*—Comparing involuntary with voluntary muscles, the involuntary muscles are found to be most disposed to contract. They contract less readily and energetically, but when they do contract the contraction is more abiding. But these very involuntary muscles are the muscles which are less liberally supplied with nerves, and hence the disposition to contract appears to be inversely related to the supply of nervous influence. At any rate this was the inference which Hunter drew from the fact; for he says, "the voluntary and involuntary muscles, having their quantity of motion in an inverted proportion to their quantity of nerves, is a strong argument against the nerves being the cause of muscular motion." ("Hunter's Works," by Palmer, vol. iv, p. 213.)

Nor is this inference unsupported by other facts.

The first of these is furnished by M. Eckardt in an experiment in which he tests the influence of heat upon the "irritability" of the nerve. In this experiment, the prepared leg of a frog, with a large portion of its nerve attached, is immersed in water at various degrees of temperature. At the natural heat of the animal—about 30° Reaumur—the "irritability" of the nerve is not appreciably affected, for, on touching the nerve with a needle, the muscle contracts as readily as it did before it was put into the water. As the temperature rises, however, the "irritability" progressively diminishes; and when the thermometer stands at 54° Reaumur, or thereabouts, it is no longer possible to provoke contraction by touching the nerve. The "irritability" of the nerve is lost, and then it is that the muscle is made to contract by the heat. Now the point of interest to the question at issue is this, that the muscle contracts when the temperature is sufficiently high to destroy the "irritability" of the nerve. In other words, the muscle is exhibited as contracting coincidentally with the loss of "irritability" in the nerve; or, as M. Eckardt expresses it, "das Zustandekommen der Zuckung durch eine momentane Zerstörung des Nerven bedingt sei." ("Grundzüge der Physiologie des Nerven-systems," Giessen, 1854.)

A fact of similar significance is to be found in the changes which Du Bois-Reymond has shown to take place in the electrical currents of nerves, for these currents (which may be designated as the *nerve current* hereafter) are found to become weakened during contraction. They behave precisely like the muscular current (op. cit.) Is this, then, an argument that the nervous influence is similarly diminished at this time?

A third fact is one which seems to show that the nervous centres induce con-

traction by suspending the nerve current. The fact is this. If a frog be thrown into a state of tetanus, its nerve currents are found to be weakened wherever they are examined; but if a nerve be divided, the tetanus immediately ceases, and the nerve current returns in the parts below the section. What then? Is it not the inference that the nervous centre had induced the tetanus by suspending the nerve current? and, if so, is there not a collateral inference that nervous influence had been suspended at the same time?

But what is nervous influence? Is it a distinct agency, or is it (so far as the muscles are concerned) the influence exercised by the nervous centres in and through the electrical currents of which nerves and muscles are undoubtedly the seat? Is it that living *quiescent* centres, nerves, and muscles, are all the seat of these currents, and that muscular contraction is brought about by the suspension of these currents? Is it that *plus* becoming *minus* in the nervous centre (be this by an act of the will or by other means), a similar change from *plus* into *minus* takes place by *conduction*, first in the nerve and then in the muscle, and that contraction is the effect of this change in the latter organ. According to this view nervous influence is presented to the mind rather as a process than as an agency, and the two facts last mentioned become direct instead of indirect illustrations of what takes place in the nerves during muscular contraction. Be this as it may, however, and be the nervous influence an agency or a process, the presumption which arises out of the facts already mentioned is, that the influence in muscular contraction is one of e-nervation and not one of in-nervation.

But if muscular contraction holds this relation to nervous influence, ought not the muscles to be contracted when the muscle is cut off from the nervous centre by dividing or otherwise paralyzing the nerve, or when the action of the nervous centre is diminished, as during sleep? Is not the fact that the muscles are generally relaxed under these circumstances a proof that the nervous centres communicate something to the muscles which is necessary to contraction? By no means.

In explaining these apparent objections it is only necessary to remember the law of the nerve current and muscular current.

It is necessary to remember that the nerve current is always present in living nerve during quiescence; that this current is weakened when the nerve is occupied in causing contraction; and that it is restored to its former degree of power when the nerve has ceased to cause contraction.

It is necessary to remember that the muscular current is always present in living muscle during quiescence; that this current is weakened during contraction; and that it is restored to its former activity immediately after contraction.

It is also necessary to remember that these particular currents are inherent in nerve and muscle, and that they continue to be manifested in detached fragments of nerve and muscle for some time after they are removed from the body. They are, no doubt, weakened under these circumstances, but their presence is unmistakable.

These are the fundamental facts which afford the clue to the solution of the difficulties alluded to, and of many others which remain behind. It does not follow, then, that a muscle ought to remain contracted when it is cut off from the nervous centre by dividing or otherwise paralyzing the nerve. On the contrary, there are no natural means of suspending the muscular current now that the nerve is paralyzed; and, according to the premises, therefore, the muscular current, which is always present when the muscle is left to itself, will always keep the muscle in the relaxed state. This muscle may, and generally does, contract at the instant of paralysis, because its current may then be weakened by being cut off from the currents which play in the nerves, and, probably, also in the nervous centres. It may contract momentarily under the touch of a foreign body, as will be explained presently. It may contract permanently when the paralysis has continued some time, and when the polar and nutritive action of the muscles have both failed, as in those long-standing cases of paralysis which are so well described by Dr. Todd. It will contract permanently in *rigor mortis*, when the muscular current has ceased altogether. But a healthy living muscle does not remain contracted when the nerve is divided or paralyzed in any other way, and it ought not to remain contracted because the

muscular current continues, and because there are no *natural* means of suspending this current now that the muscle is cut off from the nervous centres.

And if the muscles ought not to remain contracted, in cases where the influence of the nervous centres is cut off by paralysis of the nerve, they ought not to remain contracted in sleep, where the influence of these centres is only diminished. At the moment of falling asleep, there are usually, if not invariably, some muscular startings, which may show that some nervous influence has been cut off from the muscles; but these startings once over, the nervous centres, the nerves, and the muscles resume their polar play; and though their action is probably less energetic than when the nervous centres were in the waking state, it may be assumed to be more than sufficient to counteract any very appreciable degree of muscular contraction, seeing that the action which continues in a muscle for some time after its removal from the body, is sufficient to do this. Muscular contraction may indeed occur during sleep, but if it does so, there has been some additional suspension of the action of the brain, or other nervous centre, either through the influence of the will in a dream, or by some unusual failure of the circulation, such as generally operates when convulsion or spasm is brought about during sleep. But there is no reason whatever for supposing that the muscles should remain contracted during sleep.

On reviewing the whole evidence, therefore, there does not appear to be any good reason for believing that muscle is stimulated to contract by nervous influence, and there is much evidence to the contrary.

3. *Of Muscular Contraction in relation to the Blood.*—It is equally difficult to suppose that muscular contraction is in any way caused by the blood. The tendency to prolonged contraction appears to be inversely related to the supply of blood; thus this tendency is greater in the voluntary muscles of fishes and reptiles than of mammals and birds, greater in involuntary than in voluntary muscles, and greater in the muscles of any given animal during the state of hibernation than during the period of summer life. The fact, also, that the state of *rigor mortis* may be relaxed more than once, and the lost "irritability" restored to the muscle, by the injection of living blood into the vessels,—a fact which has been recently and repeatedly verified by M. Brown Séguard,—appears to be in direct contradiction to the idea that muscular contraction is stimulated by the blood.

Nor is it necessary to have recourse to the contradictory doctrine, that "the degree of irritability is inversely related to the rate of respiration," in order to account for the first-named of these phenomena. On the contrary, it is only necessary to suppose that the force of the muscular current is in direct relation to the supply of blood, and that the contraction is resolved, by the re-establishment of this current, with a rapidity which bears a direct relation to the supply of blood; and then the more marked disposition to contract, when the supply of arterial blood is deficient, means nothing more than that the muscular current, and the attendant relaxation of the fibre, are re-established with greater slowness.

There are, however, sundry facts which seem opposed to the idea that muscular action is antagonized by the blood.

In hemorrhage, an animal is convulsed when its state verges upon syncope, and the convulsion seems to depend upon loss of blood; but, when its state is one of actual syncope, the convulsion passes off, and the muscles remain relaxed until the occurrence of *rigor mortis*. It seems as if the convulsion requires the stimulus of a certain amount of blood.

In asphyxia there is a similar order of phenomena. In this state the involuntary muscles are first affected, and the intestines writhe about like so many snakes; then the convulsions become general; but when the blood has entirely lost its arterial properties, and the asphyxia is complete, the convulsions cease, and the muscles are perfectly relaxed. It still seems as if the stimulus of the aerated blood is necessary to the convulsion.

In death, also, the convulsion of the agony ceases when death gains the mastery, and the muscles remain relaxed until the occurrence of *rigor mortis*: and so it might be expected, for, as far as the circulation is concerned, death is only syncope or asphyxia, in which there is no rallying.

In all these cases, however, there is a fallacy, and in reality they afford no

manner of countenance to the idea that muscular contraction is stimulated by the blood. The facts remain, but not the interpretation which has been put upon them.

When the muscles cease to be convulsed in syncope, asphyxia, or death, this cessation is certainly not due to loss of contractile power in the muscles, for these very muscles contract vigorously under the influence of galvanism, or when pricked with a needle, and in the end they contract firmly and entirely in rigor mortis. What is lost is the faculty of responding to certain changes in the nervous centres. When the convulsion ceases, the simple fact appears to be, that the nerves have ceased to be conductors, and that the change from *plus* into *minus* in the action of the nervous centres (which is caused by hemorrhage on the one hand, and want of arterial blood on the other), is no longer conducted along the nerves to the muscles; and being no longer conducted, the muscular current is left at liberty to resume its play, and relax the muscular fibre. This interpretation is allowable, for the muscular current is far less dependent upon the supply of blood than the nerve current. Now, there is good reason for supposing that the nerves have ceased to be conductors in syncope, asphyxia, and death. When the circulation in the hand is suspended by immersion in iced water, the sense of touch and the power of movement are partially or wholly destroyed. When the principal vessel of a limb is tied, a similar result ensues, until the collateral circulation is established. In each case, also, the power of provoking reflex movements is diminished or destroyed. On the other hand, the sensibility, and the command over movement, are both increased when the circulation is roused by warmth, or in any other way. Facts such as these serve to show that the nerves require a certain supply of blood to enable them to act as conductors, and they warrant the conclusion that the nerves must have ceased to be conductors at the time when the convulsions of syncope, asphyxia, or death come to a termination, for at this time the supply of blood to the nerves is less than it is in the experiments in which the hand is plunged in iced water, or in which the principal vessel of a limb is tied,—a conclusion which is collaterally supported by the fact, that the nerves, under these circumstances, have ceased to convey sensory and volitional impressions. And if so, then it is every whit as intelligible that the convulsions should cease, under these circumstances, as that a tetanized muscle should relax when the nerve is divided.

According to these premises, it is quite intelligible that convulsions should be the consequence of a state of circulation verging on syncope, and that convulsion should cease in syncope. In the state verging on syncope, the amount of blood passing through the vessels is insufficient to keep up the proper action of the nervous centres, but it is still sufficient to keep up some degree of conducting power in the nerves, and hence the convulsions; for, the nerves being conductors, that failure in the action of the nervous centres which is dependent upon the want of blood, conducted along the nerves, entails a corresponding failure in the muscular current, of which contraction or convulsion is the result. In actual syncope, on the other hand, the circulation is no longer sufficiently active to preserve the conducting powers of the nerves, and hence the cessation of the convulsions; for, the nerves being no longer conductors, the failure in the action of the nervous centres, however absolute, no longer involves a corresponding failure in the muscular current, and, not involving this, the current returns, and the convulsions are at an end.

The same train of reasoning applies to the case of asphyxia. So long as the blood is sufficiently aerated to preserve the conducting powers of the nerves, any failure in the action of the nervous centres, which is itself brought about by the want of arterial blood, may issue in convulsion; but when the nerves cease to be conductors—as they do when the blood has lost its arterial properties—then the muscular currents are no longer suspended by the suspension of the action of the nervous centre, however complete this suspension may be; and not being suspended, the muscular current resumes its sway, and the convulsion is done away with.

For the same reasons, the tremors, or convulsions, or cramps of the agony cannot continue after death; for if the nerves cease to be conductors in syncope and asphyxia, they must cease to be conductors when all circulation is at an end, and the blood stagnant.

According to the premises, therefore, it is quite intelligible that convulsion should appear in a state *tending to syncope, asphyxia, and death*, and yet cease in syncope, asphyxia, and death, and this without supposing for one moment that the immediate stimulus of blood is necessary to muscular contraction. Indeed, there is no one fact which can serve to show that muscle is stimulated to contract by the blood.

4. *Muscular Contraction in relation to various Mechanical Agents.*—Nor is it by any means probable that muscle is stimulated to contract by mechanical agents. Instead of exciting the bladder to contract, the urine accumulates, the viscus expands, and contraction seems to *happen* when further expansion is productive of uneasiness or pain. Instead of exciting the uterus to contract, the germ grows and the womb enlarges proportionately, and contraction, to all appearance, does not happen until the growth of the *fœtus* is perfected, and the stimulus of that growth at an end. For nine long months the *fœtus* seems to have excited the uterus to continual expansion, and, to say the least, it is not easy to imagine how it can excite contraction at the time of labor. Arguing from the history of pregnancy, the probabilities, as measured by time, are those of nine months to as many hours against such a view. Discarding theory, indeed, the simple fact appears to be that the *fœtus* grows and causes the uterus to expand by the stimulus of its growing presence, and that it does this until that growth begins to trench upon the supplies which are necessary for the proper nourishment of the mother. Then the child becomes a source of exhaustion to the parent, and this exhaustion, reacting upon the uterus, brings back the state of contraction,—for, if the uterus expanded in consequence of stimulation, it must return to the state of contraction if the degree of stimulation be diminished, and this equally whether this diminution be caused by the death of the child, or by the child having lived so long that it begins to starve the mother by its too clamorous wants. In either case contraction must happen if the uterus had previously been kept in a state of expansion by stimulation. This contraction compresses the placental vessels, and depresses the life of the *fœtus* by interfering with the proper aeration of the *fœtal* blood; and this depression, reacting upon the uterus, is attended by a further degree of contraction. This contraction, like the first, compresses the placental vessels, and depresses the life of the *fœtus* by interfering with its respiration; and this depression, extending to the uterus, necessitates a corresponding degree of contraction. Again and again, contraction leads to contraction by the same process, and in this way the uterus acts upon the *fœtus*, and the *fœtus* reacts upon the uterus, with ever-increasing contraction as the result, until the completion of birth. At all events, it is impossible, upon any rational view of parturition, to refer the contraction of the uterus to any *stimulation* on the part of the *fœtus*, without ignoring the whole previous history of pregnancy. Nor can it be successfully objected to this view that the bladder is excited to contract by a stone, or the uterus by the clots of blood which occasionally remain after delivery. There is no evidence whatever that the stone acts in this manner. The bladder is morbidly sensitive under these circumstances, and a very small quantity of urine is enough to cause distress or pain, and thus the *will* or *instincts* are roused to empty the bladder more frequently than usual. The uterus, also, goes on contracting after delivery, until the process be complete, and this equally whether there be clots in contraction. If there are clots in the cavity, it only shows that more of the process of contraction remains to be effected than there ought to be; but it cannot show that the clots excite contraction, for in other cases the same contractions take place, and effectually where no such clots are present.

It is not even certain that a needle stimulates contraction. The muscle does not always contract under these circumstances, and when it does, there is some reason to believe that the contraction may be due to the discharge of electricity previously present in the muscle. The fact that there is a disappearance of electricity at this time, and the known analogy between the structure of the muscle and of the electrical organ of the torpedo, and between the circumstances attending the production of contraction on the one hand and of discharge on the other, are, to say the least, in favor of this supposition. But it may be objected that this contraction is provoked by the touch of a piece of glass or of any other non-

conductor; and this objection is not easily disposed of. It may be, however, that that molecular arrangement of the muscle which is necessary to the existence of the muscular current is broken by the *pressure* of the touching body, in which case there would be a loss of action similar to that which would happen in a galvanic pile, if the pile were broken by pressing asunder the plates at any point. Or it may be that the polar condition of the muscular molecules is so delicately balanced, as to be disturbed and, for the time, diminished by the simple attraction which operates between the sealing-wax or glass *as matter*, and the muscular molecules *as matter*.

Under any circumstances, however, there is very insufficient reason for supposing that muscle is stimulated to contract by any kind of *mechanical* agent.

5. *Muscular Contraction in relation to Heat.*—The effects of temperature upon muscular contraction appear, at first sight, to be at variance with the premises, but they are not so in reality. The plain facts are, that muscle will bear considerable variations of temperature without contracting, and that it is thrown into a state of marked contraction, and that equally, by a very high or a very low temperature.

The explanation of this apparent paradox is to be found, not in the immediate effects of the temperature, but in the changes which are wrought by the temperature in the electrical condition of the muscle. So regarding the phenomena, it is quite intelligible that contraction should be caused by low degrees of temperature, for M. Matteucci has shown that the muscular current is suspended under these circumstances. On the other hand, there is every reason to believe that this current is similarly suspended by heat, when heat causes contraction. This is certainly the case with regard to the "irritability" of the nerve, as is shown by M. Eckardt, in the experiment already cited; and it can scarcely be otherwise with regard to the polar action of both nerve and muscle, for the experiments of M. Du Bois-Reymond go to prove, that this action is diminished in every form of muscular contraction. It follows, also, from the same experiments, that the muscular current is not depressed to the point of allowing contraction by any intermediate degrees of temperature; and hence, upon the same premises, it is quite intelligible that the muscle should bear all intermediate degrees of temperature between the extremes without contracting.

Instead of being a paradox, therefore, it is the natural consequence of the workings of temperature upon the muscular current, that the contractions should follow the order which they are found to follow, and being so, it is impossible to say that muscle is stimulated to contract either by heat or by cold.

6. *Muscular Contraction in relation to Light.*—Muscular contraction appears to be favored by darkness, and not by light. It is in the darkness certainly, and not in the light, that contraction takes place in the irritable cushions of the sensitive plant; and it appears to be the same with the iris. *It appears to be the same*, for it is more easy to suppose that the iris expands under the stimulus of light, and so closes the pupil, than that this curtain is drawn and the pupil closed by sphincter fibres which have no existence. This explanation is supported by the authority of Bichât; it equally accounts for the phenomena; and it harmonizes with the known influence of light upon the sensitive plant.

7. *Muscular Contraction in relation to Chemical and Analogous Agencies.*—The evidence which belongs to this part of the subject is not so complete as could be desired, but, so far as it goes, it is quite in accordance with the premises. It is furnished by M. Eckardt (op. cit. p. 82). On analyzing it, the simple fact is found to be, that the power of inducing contraction which belongs to any of these agents, is directly related to the power which the agent has of destroying the "irritability" of the nerve. The agents themselves act very differently—some by abstracting water from the nerve, some by altering the normal albuminous constituents of the nerve, and some in a more recondite manner: but all destroy the "irritability" of the nerve for the time being, and they do not induce contraction without destroying the "irritability." On experimenting with an acid, for example, the readiness with which contraction may be induced in the muscle by "irritating" the nerve with the point of a needle is found to diminish in direct proportion to the concentration of the acid, and when this concentration is sufficiently great to destroy the "irritability" of the nerve, then, and not till then, is

the muscle made to contract by the *acid*. The experiment, in fact, is the precise counterpart of the one related previously, the only difference being that the agency of an acid is substituted for that of heat.

—So far, then, it appears to be altogether improbable that muscle is stimulated to contract by any of the several agencies which have been passed under review; but there are other and more difficult questions which remain in the background, and these must be examined before any definite conclusion can be arrived at.

II.—In this part of the inquiry, the object is to examine into the real nature of muscular contraction, and to point out reasons for supposing that this contraction is nothing more than a passive physical consequence of the common molecular attraction of the muscle.

There are, undoubtedly, many facts which appear to stamp upon muscular contraction the peculiar impress of vitality. How else can the will have any concern in it? Why do the muscles lose so much of their contractile power after death if this power is not a vital endowment? Upon what mere physical hypothesis can the remarkable changes which are exhibited in the *form* of the muscular fibre be accounted for? And if muscular contraction is a vital phenomena, then it is dependent upon stimulus, for life is the stimulus of stimuli.

As to the *will*, it is by no means certain that the action upon muscle is that of a stimulus. Undoubtedly *action* is involved in voluntary muscular contraction, but it is a question whether the *act* be in the *mind*, or in the *muscle*. The will *may act* by withdrawing something from the muscle, as well as by communicating something to the muscle. The will *may act* by suspending the muscular current for the time, and this supposition is in accordance with the premises. At any rate these premises are quite opposed to the idea that the will communicates anything to the muscle during contraction.

There is, undoubtedly, a diminished degree of shortening, and a loss of power after death; but it by no means follows from these facts that the contraction is dependent upon the stimulus of life.

The diminished degree of shortening after death may be nothing more than the simple physical consequence of the circumstances in which the muscle is placed. When a muscle contracts during life, the antagonist muscle either relaxes or opposes no resistance to this contraction. The blood also is fluid, and the intermuscular vessels are readily emptied when pressed upon by the contracting fibres. But after death the spasm is universal, and excess of contraction in any set of muscles is not favored by the relaxation of antagonist muscles. After death, also, the full degree of muscular contraction may be prevented by the coagulated contents of some of the vessels. It must not be forgotten, however, that muscle can contract to a very great extent after death: thus the ventricular cavities of the heart are frequently obliterated by the contraction of the ventricular walls.

Nor is the loss of muscular strength after death a necessary proof that the contractile power of muscle is a vital endowment. Some loss of strength, indeed, may, or rather must, be the natural physical consequence of the circumstances in which the muscular fibre is then placed. In the first place, the fibre may be acted upon by the solvent juices which are present in muscle, and which Liebig has shown to be analogous in their properties to gastric-juice,—these juices acting upon the fibres just as the gastric-juice is sometimes found to act upon the coats of the stomach. Acted upon in this manner, the fibre may be partially dissolved, and to that extent weakened. In the second place, the dead muscle is yielded up to the process of decomposition, and the affinities of the muscular molecules may be weakened by the incipient or advanced resolution of these molecules into their constituent elements. Both these causes may combine to produce the result, and, combining, it is evident that the dead muscular fibre must suffer some loss of strength, not because the contractile power of muscle is a vital endowment; but because this power requires for its full manifestation a physical integrity of the muscular fibre which no longer exists.

It is obvious, therefore, that the muscles may lose much of their contractile power after death, without this power being of necessity a vital endowment.

When the movements of the living muscular fibre are considered, the impres-

sion undoubtedly is that these movements are altogether mysterious and peculiar. Why the fibre in contracting should undergo little or no change in bulk, but gain in breadth what it loses in length; and why it should undergo such a remarkable degree of elongation in passing out of the contracted state, appears to be altogether beyond the scope of any physical explanation. The phenomena seem to be too wonderful to be accounted for by anything short of *life*—that mysterious something which, by being more mysterious, is made to account for all mysteries.

On reflecting upon these movements, however, a good deal of their mystery is dispelled, and, in the end, they are found to be capable of receiving a definite physical expression. Muscle, indeed, is made up of fibrin, and this fibrin, for all practical purposes, is identical with the fibrin of the blood. Now, this fibrin of the blood exists in a fluid form, and in a solid form. The fluid form is the living form; the solid, or coagulated form, is that which is assumed on death. Now, the question is, whether or not the fibrin of the muscle undergoes changes which correspond to these. One thing is certain, and this is, that *rigor mortis* is concurrent with the coagulation of the fibrin of the blood. More than this, there is good reason to believe that these two phenomena—*rigor mortis* and *coagulatio mortis*—are not only concurrent, but analogous. What, then, is the condition of the fibrin of the muscle *before rigor mortis*? Is it—like that of the fibrin of the blood—one of fluidity? What is the condition of the fibrin of the muscle in ordinary contraction? Is it, as in *rigor mortis*, one of *coagulation*? These questions naturally arise out of the history of the fibrin of the blood; and if they are answered affirmatively, then there is no difficulty in accounting for the peculiar changes of the muscular fibre.

If, then, the fibrin of the muscle be in a *solid* state during contraction, and in a *fluid* state at other times, it is easy to understand how the fibre may undergo that remarkable change in length which it undergoes when the contraction passes off; for the fluid fibrin will *run* where its course is least impeded, and this is in the direction of the tubes containing it. Again: if the fibrin becomes *solid* in contracting, the form of the contracting fibre need be no cause of difficulty; for this form may be the *natural* form of the fibrin, just as a rhomb may be the natural form of one solid substance, and a cube of another. Nor need there be any change of volume; for many substances solidify without undergoing any such change. Whatever is the real cause of muscular contraction, therefore, there is nothing in the changes of the muscular fibre which *necessitates* the conclusion that these changes are of a vital and mysterious character.

What, then, is muscular contraction? If it is not a vital phenomenon, is it a physical phenomenon? Directly or indirectly everything up to this point has tended to show that it *may* be a physical phenomenon; and there is, indeed, only one serious objection to this conclusion. This arises out of the law of the contraction. If the contraction is the consequence of any known physical attractive force, it is contended, the force of the contraction ought to increase after a definite law as the fibre contracts; but the very reverse is the actual fact, and the force diminishes as the fibre contracts. Now, there is no doubt that the force diminishes as the fibre contracts; but there is every reason to doubt the correctness of the conclusion which has been drawn from this fact. The experiment of M. Schwann, which is usually cited as the proof, does not warrant any such conclusion. On measuring the force of contraction in the muscles of a frog's leg at different degrees of contraction, M. Schwann found that the force decreases as the muscles contract, and because it does this he concludes that the power cannot be that of molecular attraction. But he curiously forgets that the non-contracting, or imperfectly-contracting cellular substance of the muscle, and the inelastic fluids contained in the muscle, may oppose such a *resistance* to the contraction of the proper muscular fibres, as to mask completely the pure law of that contraction; and doing this his conclusion is altogether invalid. This experiment may indeed show the *degree of resistance* which is opposed to muscular contraction; but it is altogether worthless if it be supposed to show that the law of muscular contraction is essentially different from the law of known physical attractive forces; and it is upon this experiment alone that the idea of this essential difference in the law of muscular contraction is based.

But if muscular contraction is not a vital phenomenon, what is it? Is it the result of an *active* attractive force connected with the state of polar action? There are such attractive forces, unquestionably; but whenever they are present the polar action is also present, and whenever they are increased or diminished the polar action is also increased or diminished. It follows, therefore, that the contractile force of muscle cannot be of this kind, for the current of the muscle fails when this force comes into play, and when the force is manifested permanently, as in *rigor mortis*, the current is forever extinguished. It follows, also, from the same evidence, that muscular contraction cannot be the result of any *active* physical attractive power, for there are no other forces of this kind besides those which are connected with polar action.

Only one course remains open, therefore, and this is to refer muscular contraction to that *passive* power of attraction which belongs to muscle in common with all matter; for this is the only power which is left after all active powers of attraction are done away with. This is the force which *must* come into play when the muscle ceases to be *resolved* by polar action; and this force is sufficient to account for all the phenomena which yet remain unaccounted for. It accounts for the *power* of muscular contraction, for it is this force, which, acting in the cooling bar of metal, is sufficient to draw in the walls of a bulging building. It accounts, also, for the phenomenon of *rigor mortis*—that phenomenon which is utterly inexplicable on the supposition that muscular contraction is caused by any kind of stimulation; for if this rigor is dependent upon simple molecular attraction, it is quite intelligible that it should come on sooner in cases in which the vitality of the system has been exhausted before death by old age, or by chronic disorder, such as consumption, than in persons who have been cut down suddenly in the full vigor of life, and that the fibres should remain contracted until it breaks up in the ruin of final decay,—for all that is necessary for the continuance of this contraction is the physical integrity of the fibre. It accounts, that is to say, for those unexplained and seemingly contradictory facts which constitute the distinctive features of *rigor mortis*, and accounting for them, this very circumstance becomes a strong argument that molecular attraction is indeed the cause of muscular contraction.

—The conclusion, then, to which the whole of the previous argument tends is, that muscle is not *stimulated* to contract by any agency, physical or vital, but that contraction is a *passive* phenomenon which *happens* when muscle is left to the play of simple molecular attraction. In other words, *resolution* and not contraction would appear to be the *characteristic* state of living muscle,—this resolution being the natural consequence of the muscular current,—and contraction to be nothing more than the return of the muscle to the condition of those tissues which are never relaxed by currents.

III.—In this part it is proposed to examine the especial muscular movements which are manifested in the coats of vessels, and to show, not only that these movements can be explained by no other law than that which has just been stated, but that the law gives the clue to the interpretation of “capillary motion,” and of the rhythm of the heart.

1. *Of the movements manifested in the coats of ordinary vessels, and of “capillary motion.”*—The manner in which the coats of vessels are affected by the several stimuli which act upon them need be no matter of obscurity. When the nervous energy is exuberant, as in joyous excitement, the skin is flushed; when this energy is depressed, as during fear, the skin is blanched. When the blood is rich and stimulating, as in plethora, the vessels are red and full; when it is poor and watery, as in anæmia, they are shrunk and empty. When the hand is held to the fire it flushes; when exposed to cold it becomes blanched. These phenomena appear to be utterly inconsistent with the idea that the muscular coats of the ordinary vessel are stimulated to contract by nervous influence, by blood or by heat; and there are many phenomena of the kind which are not less inconsistent.

On the contrary, this evidence appears to show that the coats of vessels expand under the influence of these several stimuli, and the test of the correctness of this conclusion is, that this view affords a clue to the interpretation of these mysterious movements of the blood which are independent of the impulse of the

heart. In obtaining this clue, it must be assumed, not only that the vessels expand in this way, but that they expand to a far greater extent than the blood which is contained within them, and which is acted upon by the same causes of expansion; and, in order to this assumption, it must be remembered that the dartos and the subcutaneous cellular tissue generally, which tissues are the analogues or direct representatives of the tissues of which the coats of vessels are mainly built up, are relaxed (expanded) to a very remarkable degree under very small increments of heat, or any other stimuli—a degree to which there is nothing comparable in the blood or in any fluid under any circumstances. Let this be assumed then and the rest is obvious. When stimulated the vessel expands to a greater degree than the blood contained within it, and the result is that certain vacua would be formed between the vessel and the blood, if more blood did not move in to occupy the increased space. Hence, blood must rush into the *stimulated* vessel, and this equally whether the vessels be acted upon by external heat, as by holding the hand to the fire, or by the natural stimulation of the blood itself within the vessels. In this way the *action* of the blood is to make a way for itself through the vessels.

2. *Of the Rhythm of the Heart.*—This problem is altogether inexplicable on the supposition that the ventricular systole is the result of stimulation, but upon the opposite theory it is easily disposed of.

The fact that the heart remains distended with blood during a full half of the time occupied in the rhythm is a strong argument that the blood does not excite the ventricular systole; and the history of plethora and anæmia are to the same effect. In plethora the pulse is full and slow; in anæmia empty and quick. In the one case, that is to say, the heart fills to distension with rich blood, and the pulse is deferred; in the other case, the heart takes in a small quantity of poor unstimulating blood, and expels it immediately. The facts are the very opposite of what they would be if the blood excited contraction, for then the pulse would be small and quick in plethora, and full and slow in anæmia. But if the blood provokes the ventricle to expansion by its stimulating properties, then it is intelligible that the heart should dilate more, and the dilatation continue longer when the blood is rich and warm, as in plethora, than when it is poor and watery, as in anæmia.

It may also be presumed that the ventricular systole is not excited by "nervous influence," if any argument may be drawn from what takes place when the nervous energy is more or less depressed, as during fear. Under these circumstances the heart beats hastily, and yet little blood is propelled into the vessels. The beats are perhaps doubled, and yet the skin is cold and pale. Now, under ordinary circumstances, the double number of beats would propel a doubled quantity of blood into the vessels, and the skin would be hot and red, instead of cold and pale; and hence the presumption that, in the apparently anomalous condition of the rapid pulse and pale skin which attend upon fear, the chambers of the heart are diminished in size by the contraction of the walls, and that they thus receive and propel less blood than usual. In other words, the ventricles appear to have contracted *without* nervous influence.

On realizing the actual phenomena of the heart's action, it appears still more improbable that the ventricular systole is caused by stimulation of any kind, and of the blood particularly. At the systole the arterial blood rushes through the coronary arteries into the coats of the heart, and the diastole occurs. The blood remains until it may be supposed to have lost its arterial properties, and then the systole returns. This is the simple fact. It is the *diastole* and not the systole which *appears* to be stimulated by the blood; and this view has the recommendation of affording the key to the rhythm of the heart.

Let it be supposed that the *ventricular* diastole is due partly to the force with which the blood is propelled into the coronary arteries by the systole, and partly to the stimulation of the arterial blood within the vessels, and (to some extent) within the chambers of the heart. Let it be supposed that this diastole continues as long as the blood retains its arterial properties, and that the systole returns when these properties are exchanged for those of venous blood, and when the stimulus of oxygen is no longer present to avert the systole, and the rhythm is intelligible. Again, the systole restores the diastole; and again, in the same

order, systole gives rise to diastole, and diastole to systole, as long as the ventricle can respond to the stimulus of the blood.

It even follows that the *auricular systole* must be contemporaneous with the *ventricular diastole*, for there is good reason to believe that this systole is more the effect of the *falling in* of the auricular walls upon the sudden withdrawal of blood from the auricles by the ventricular diastole, than of any special contraction in the auricles themselves. There is reason to believe this, partly from the absence of valves at the mouths of the veins opening into the auricles, and partly from the structure of the coats of the auricles. If the auricles had to contract *primarily*, it may fairly be assumed that there would have been valves to prevent the reflux of blood into the veins; if they had to contract *rapidly*, it may be assumed with equal propriety that the muscular structure would have been like that of the ventricle or any other muscle which has to contract rapidly, and not, as it is, like that of intestinal or other muscle which is only capable of contracting sluggishly. In this way there is no difficulty in accounting for the movements of the auricles; for the diastole of these organs (which is virtually contemporaneous with ventricular diastole) is partly due to the same cause—the rush of blood into the coronary arteries—and partly to the onward current of blood which sets in from the veins; and their systole is *mainly* due to the collapse of their walls on the passage of blood into the ventricle, at the ventricular diastole.

Hence, the rhythm of the heart receives a physical explanation, if the blood be supposed to counteract, and not to stimulate, contraction.

The same explanation applies even to the movements of the heart, or of a fragment of the heart, after removal from the body. Under these circumstances the air takes the place of the arterial blood, and the only difference is that the cardiac fibres are now stimulated to expand by the oxygen of the air instead of by the oxygen of the blood. If the heart be entire the circumstances are but little changed. The oxygenated air is driven into the coats of the heart through the coronary arteries (partly, at least) by the ventricular systole, and there it causes the diastole; but when this oxygen is replaced by carbonic acid, and the air acquires the negative properties of venous blood, then the diastole must cease, and the systole return. And thus diastole will follow systole, and systole diastole, for some time. Nor is the case very widely different when it is a mere fragment of a heart, which beats rhythmically. Acted upon by the atmosphere, the oxygen excites the electrical condition of the fibre, and induces expansion. Fresh supplies of oxygen, however, are required for the continuance of this action; and hence, it follows that the action will fail, and be followed by contraction, when the oxygen in contact with the fibre is converted into carbonic acid. This contraction will displace the old and used-up air, and fresh air will come in to take its place. This fresh air will renew the action, and again place the fibre in a state of expansion, and this expansion will continue so long as the air retains its vivifying properties. Then the resulting contraction will replace the old air with new, and thus expansion will follow contraction, and contraction succeed to expansion time after time. In this way the air will act upon the interior as well as upon the exterior of the fragment, for the action upon the fibres composing the vessels, the cut ends of which are open to the atmosphere, will be to cause these vessels to expand, and to *draw*, as it were, the air into the interior—to draw it in and then expel it, much in the same way, and partly for the same reason, as the air-tubes draw in and expel the air which serves as breath.

There are other arguments of a similar significance to those which have been cited; but sufficient has been said to show that the muscular contraction which is manifested in the coats of the vessels and in the heart, cannot be regarded as the result of stimulation; while, at the same time, the opposite theory is found to give a clue to the explanation of two of the greatest mysteries in physiology, namely, “capillary motion,” and the rhythm of the heart.

IV.—In this part—the fourth and last—it is proposed to glance at the pathology of muscular contraction, and show that this is in conformity with the physiological premises.

Now the pathology of the disorders in which muscular contraction is in excess—namely, tremors, convulsions, and spasms, in their multifarious forms—is far

too extensive a subject to be considered here, and all that it is possible to do is to glance at the substance of the evidence furnished elsewhere (Epilepsy, and affections of the nervous system, which are marked by tremor, convulsion, and spasm. Churchill, 8vo., 1854). This evidence, then, has been elicited from an examination of epilepsy, of affections allied to epilepsy, of the question of periodicity, and of treatment; and this arrangement of the subject had best be preserved here.

1. In epilepsy, then, the condition of the circulation is habitually one of depression. The plethora of the butcher is never met with, and any vascular fulness, if such exists, is mere venous congestion. This depression is aggravated before the fit, and during the fit the condition tends either to syncope or asphyxia. If inflammation, or true fever, chance to be developed, so surely are the convulsions of epilepsy banished for the time. These conclusions are warranted by all the facts of the case.

With this condition of the circulation an active condition of the nervous system is incompatible, and this is quite in accordance with the actual facts. Sense and intellect are completely obliterated during the fit, and at all times they are under a cloud, or if this cloud is occasionally dispelled, and the patient is influenced by any real excitement, he is, for the time, relieved from his fits. *Agitation* may precede the fit, but never true excitement.

The muscles themselves are generally wanting in real tone.

The several causes of the malady are all exhausting, not exciting, in their character.

In a word, there is every reason to believe that the muscles of the epileptic contract excessively (as might be expected from the premises), because they are less stimulated than they ought to be, and not for a contrary reason.

2. In affections allied to epilepsy, whether they be marked by tremor, convulsion, or spasm, the same conclusions are arrived at.

The condition of the circulation during the paroxysm invariably tends to syncope or asphyxia, and inflammation or true fever is utterly incompatible with any form of tremor, convulsion, or spasm. Thus, tremor precedes fever, as rigor, and succeeds it, as subsultus; but it never accompanies fever. Thus, convulsion takes the place of rigor or subsultus, but it never happens in the intermediate hot stage of fever. Thus, the spasm of whooping cough disappears if pneumonia or bronchitis are developed, and returns again when the inflammation is over. In every instance the muscular turmoil is coincident with the opposite of vascular activity—the state tending to syncope or asphyxia.

As in epilepsy, so here it may be argued, that this condition of the circulation necessitates a condition of inaction in the function of the nervous system, and this presumption is fully corroborated both by the symptoms during life and the appearances after death. If inflammation of the great nervous centres has been present, the history of the case fully shows that this has been either before or after the tremor, convulsion, or spasm. The patient may be *agitated*, but he is never excited, in the true sense of the word.

The muscles, also, are found, as a rule, to be wanting in tone; and the so-called *exciting* causes are always *depressing* in their character.

Everything, indeed, tends to support the previous conclusions, and to show that in affections allied to epilepsy, as in epilepsy itself, and in ordinary muscular contraction, the muscles contract independently of any increased stimulation. The physiology explains the pathology, and the pathology confirms the physiology.

3. The phenomena of periodicity also point to conclusions of the same kind. The plant exhibits plainer and more numerous evidences of periodicity than the animal, and it does this, it is argued, because it has less of that innate life which enables the higher animals to be partially independent of the vivifying influences which are derived from the outer world. If man exhibits more evidences of periodicity than he ought to do, it follows, therefore, that he is shorn of some of that innate life which is the badge of distinction between him and the plant; and hence the periodicity of epilepsy or any cognate disorder is merely one proof that the system in which these diseases are manifested is less stimulated—less vitalized than it ought to be.

4. If, then, these diseases are of this character, it follows, as a necessary consequence—what, indeed, may almost be said to be proved by experience,—that bleeding, purging, or any lowering measures are not calculated to do any good; and that the only hope of benefit must be placed upon measures which will not only strengthen, but *rouse* the system,—a conclusion which is fully warranted by the experience of the author.

The only conclusion, then, which can be drawn from the consideration of those special muscular movements which are manifested in the coats of vessels, and of the pathology of the subject, is the same as that already drawn; and the final conclusion must be, *that muscle does not contract in consequence of the communication of any stimuli to the muscle, but it contracts because the common molecular attraction of the muscular fibre is no longer counteracted by the action of these stimuli upon the muscle.*

On the Rhythm of the Heart in the Fœtus. By Dr. FLEETWOOD CHURCHILL. ("Dublin Quarterly Journal of Medicine," May, 1855.)

Dr. Churchill has been lately engaged in investigating the rhythm of the fœtal heart in the Rotundo Hospital at Dublin, and the results at which he has arrived up to the present time may be stated in the following propositions:

1. That the pulsations of the fœtal heart range from 110 to 160 per minute, the average being somewhere about 136, and the audible sounds double, therefore ranging from 220 to 320.
2. That of the two sounds, the first is the weaker and less distinct; the second loud and distinct; the first audible only within a short distance of the fœtal heart; the second over a considerable extent of the uterine tumor.
3. That the rhythm may be expressed by dividing the entire period of a pulsation into four parts, and placing a dot under the figures, according to the succession of the two sounds, as 1 2 3 4, and an accent over the louder sound.
4. That immediately after birth, the first and second sounds of the heart become equally loud and distinct from an increase in the first sound.
5. That the rhythm changes, and may be expressed thus: 1 2 3 4.
6. That this peculiarity of the rhythm continues for about a year and a half, and then gradually changes to that of the adult, expressed thus: 1 2 3 4, with the first sound stronger and louder than the second.

On the Composition and action of the Gastric Juice. By MM. de GRUNEWALD and DE SCHROEDER. ("Archiv. G n rales de M decine," February, 1855; and "Dublin Quarterly Journal of Medicine," May, 1855.)

Notwithstanding the numerous investigations to which the gastric juice has already been subjected, the observations made by Drs. Grunewald and Schroeder on a woman affected with fistula of the stomach will be read with interest. This woman, aged 35, and enjoying good general health, weighed 53 kilogrammes (nearly 117 lbs. avoirdupois), and was suckling an infant at the time she was under observation. The fistula, which was of two or three years' standing, had doubtless been produced by a perforating ulcer of the stomach. The quantity of gastric juice secreted was estimated, exclusively of the saliva,—65 grammes (a little more than two ounces) per hour,—at 584 grammes in the hour, or 14.016 kilogrammes (nearly 31 pounds) daily. This enormous proportion is much greater than that given by Bidder and Schmidt—6.4 kilogrammes (a little more than 14 lbs.) each day. The smallest quantity was collected in the morning, fasting; however, it was never less than from 40 (?) to 400 grammes (about 13 ounces) in the hour. The fluid then obtained was in general clear, serous, and colorless; at other times it was more viscid, it sometimes contained bile, without any sign of functional derangement being present. Sarcin  were, with the aid of the microscope, pretty often observed.

As to the chemical constitution of the juice, which was investigated by Dr. Schmidt, the fluid obtained early in the morning, while the woman was fasting, was either neutral or slightly alkaline; after food was taken it was always acid.

No hydrochloric acid was found in the analysis of several portions of gastric juice collected at different periods of the day; the presence of butyric and lactic acids is more probable. The following is a resumé of these analyses. In 1000 parts he found, water, 956.595; solids, 43.405;—the latter consisted of organic matter, 36.603; inorganic, 6.802; the inorganic contained chloride of sodium, 4.633; phosphate of lime, 0.961; of magnesia, 0.260; phosphate of iron, 0.006; potash belonging to the organic substances, 0.363.

The organic substances consisted of coagulable albuminous matter (pepsin), sugar, butyric acid, uncoagulable protein substances, and lactic acid. The organic acids are not considered as primarily present in the gastric secretion, even as products of the ingested aliments; they vary in quantity according to the quality of the nourishment. Hydrochloric acid, on the contrary, has been regarded as an essential compound, although the analyses do not exhibit it, doubtless because it is easily neutralized by the alkalies of the saliva.

In one analysis Schmidt found free hydrochloric acid, but only in the proportion of two parts in 1000, a ratio ten times less than in the dog. As to the question whether the gastric juice prevents the saliva converting starch into sugar, as Bidder and Schmidt assert, the authors found that the action of the saliva was not destroyed; they however confirm the observation of those chemists that sugar is not to be found in the stomach of the dog, even after the ingestion of boiled starch.

The digestion of protein aliments was examined by introducing into the stomach through the fistula a certain weight of coagulated albumen, meat, &c., enclosed in thin linen bags; the loss of substance of the particles during a given space of time was thus observed as well as the changes which took place in the microscopic structure of the elements. It was thus found that for protein substances the solvent power of the human gastric juice is far inferior to that of the dog. Solution is perfected in the stomach of the dog in from two to four hours, while in that of man it requires nineteen or twenty hours. Raw meat is better digested by the human stomach than dressed meat, and veal than beef.

As to the microscopic alterations, the primary fasciculi were found, after an hour and a half, easily separable from one another, without having themselves undergone any change; the sarcolemma was destroyed. After two hours and three quarters, the primary bundles began to show transverse fissures; after three hours, only striated lamellæ were seen transversely; after three hours and a half, besides quadrilateral lamellæ, there were some primary fasciculi, longitudinally and transversely fissured, frequently denticulated at their extremities; after three hours and three quarters, the primary fasciculi were two or three times longitudinally divided. After four hours and a half, there was scarcely any solid residue in the stomach, with the exception of a small number of primary bundles, much fissured both longitudinally and transversely, but still exhibiting the transverse striæ. At the end of three hours and a half, or four hours, the stomach was in general empty; the protein substances were then submitted to the influence of the intestinal secretion. As to the digestion of fat, the membrane of the cells is dissolved in the stomach, but the fat itself does not undergo any alteration. Milk, after three quarters of an hour, formed a thick coagulum, enclosing a large quantity of milk globules and of free fat. At the end of two and a half hours, the casein was observed in part as an amorphous substance, in part as membranous and transparent fragments, with some unaltered milk globules; at the end of three hours and three quarters, scarcely any remained in the stomach.

These changes, which in the stomach of this woman required three hours and three quarters, or four hours and a half, were completed in the stomach of a dog in two hours.

An experimental inquiry into the nature of the Metamorphosis of Saccharine Matter, as a normal process in the Animal Economy. By Dr. PAVY. (Proceedings of the Royal Society, 3d May, 1855.)

The saccharine matter met with in the animal economy is derived from two sources—from the vegetable kingdom, and from the liver of the animal itself;

in each case being poured into the general circulation through the hepatic veins. The liver not only enjoys the power of forming sugar, but it likewise exerts (as shown by the experiments of Bernard) some modifying influence over that which is traversing its capillaries, and which has been absorbed from the food, by which it is transformed from the *vegetable* into *animal* sugar, and thus rendered more apt for serving in the processes of animal life.

The sugar poured into the general circulation through the hepatic veins is conveyed to the capillaries of the lungs, where it in great part disappears, but never entirely so, according to very numerous analyses which the author has made on this subject. If the blood be traced onwards from the arteries through the systemic capillaries into the veins, the small amount of sugar which impregnates arterial blood will be found to be still undergoing a process of destruction; and what appears exceedingly interesting, this process of destruction is not carried on with equal activity in the different parts of the system at large. In the capillaries of the chylipoietic viscera, the destruction is so complete, that the blood in the portal vein may be entirely free from saccharine principle, when the blood returning from the other parts, as that contained in the femoral or jugular veins, remains slightly impregnated. This curious fact has a bearing that will be presently adverted to, with reference to the views to be advanced concerning the nature of the metamorphosis of sugar in the animal economy.

The principal seat of destruction of saccharine matter in the animal system being located in the respiratory organs, seems at first sight to support the theory of Liebig—that sugar is one of those substances which undergoes a process of combustion, by its direct combination with oxygen, and its resolution into water and carbonic acid. Some experiments on the temporary obstruction of the respiration, and the examination of arterial blood before and after the operation, led the author to call in question this view, as he observed that, notwithstanding the supply of oxygen was cut off to such an extent as almost to occasion death, yet a considerable destruction of sugar took place in the lungs. This, coupled with the fact that a disappearance of sugar takes place in the systemic capillaries, and unequally so in different portions of them, induced him to push his investigations, and see if there might not be some other cause in operation in the living animal to effect the normal destruction of sugar, besides the direct chemical action of the oxygen absorbed in respiration. The results of these investigations, which were first directed towards the changes produced in blood normally containing sugar, injected through the capillaries of lungs removed from the animal, and artificially inflated with atmospheric air or oxygen gas, have induced the author to refer the metamorphosis of sugar in the animal economy to a process which is perfectly consistent and analogous with the well-known chemical bearings of this substance apart from the animal system.

In experiments which the author has now several times repeated, he injected blood removed from the right side of the heart of an animal—and therefore normally containing sugar—through the capillaries of the artificially inflated lungs of another, and found that, as long as the blood retains its fibrin, there is as much destruction of its sugar as would take place in the living animal; but that where the fibrin has been separated from the serum and corpuscles, the sugar ceases to be influenced by the presence of oxygen, or ceases to disappear during this process of artificial respiration. It would hence appear that something besides mere contact with oxygen is requisite for the destruction of sugar. But, in other experiments, he has found that oxygen is nevertheless a necessary agent concerned in the process of transformation observed during the arterialization of the blood that has not undergone spontaneous coagulation. It would therefore seem, in fact, that oxygen acts secondarily on the sugar through the medium of the fibrinous constituent of the blood: that it exerts some changes upon this azotized principle, which are capable of inducing the metamorphosis of sugar.

If we look to the ordinary chemical bearings of saccharine matter apart from the animal system, we find that an azotized substance undergoing the molecular changes of decomposition, placed in contact with sugar, readily excites a process of fermentation, and converts it by a mere alteration of the grouping of its elements into another substance, one atom of sugar ($C_{12}H_{22}O_{11}$) being

resolved into two atoms of lactic acid ($C_3H_5O_3$). We also find that sugar is not susceptible of oxidation, except under the influence of strong chemical reagents. Chemical analogy, therefore, would lead us to look upon the secondary reaction of oxygen as the more probable process of physiological destruction, especially when we take into consideration, that nowhere do we meet with such a constant series of molecular changes taking place as amongst the azotized constituents of a living animal. In the above-mentioned experiment of injecting fibrinated and defibrinated blood through an artificially inflated lung, when the blood is capable of undergoing the molecular changes of assimilation on contact with oxygen as in the living animal, the sugar in great part disappears; but so soon as the fibrin is separated by spontaneous coagulation, and the blood has thus lost its vital characteristics, oxygen is no longer capable of exerting any metamorphosing influence on its saccharine ingredients.

If the molecular changes occurring during the decomposition of an azotized substance be capable of converting sugar into lactic acid, why should not the molecular changes occurring during the building up or elaboration of this same nitrogenized compound effect the same? Indeed, we have seen that the process of destruction is carried on to a certain extent in the systemic capillaries, and more especially in those of the chylopoietic viscera, where the molecular changes of nutrition are also correspondingly carried on with greater activity than elsewhere. So that analogy and experiment would tend to show that the physiological destruction of sugar is owing to a process similar to fermentation induced by the molecular changes occurring in the nitrogenized constituents of the animal during life. And, in accordance with this, we find lactic acid present in the system, and largely separated from arterial blood by the muscular tissue, and the secreting follicles of the stomach.

As regards the lactic acid fermentation, it is well known that the presence of an alkali favors, whilst that of an acid retards the process. In two experiments on animals, the author injected carbonate of soda and phosphoric acid into the circulating current, and observed in the case of the latter that sugar immediately accumulated in the blood.

The preceding observations refer more especially to the changes that take place in the saccharine ingredient of the blood during life; and the author next proceeds to notice some interesting phenomena observable during the decomposition, and even the spontaneous coagulation of blood containing sugar.

If the blood of an animal normally impregnated with sugar be placed aside, and allowed to undergo spontaneous coagulation, on examining separately the serum and clot on the following day, it will be found, that although the serum may be largely saturated with sugar, the clot is entirely, or almost entirely destitute of it. Now, as the clot is moist and remains to a certain extent infiltrated with the serum from which it has partially separated, it would appear that even the molecular changes arising from the spontaneous coagulation of the blood are sufficient to effect the destruction of normal animal sugar. And this conclusion is strengthened by the fact, that in diabetic blood (the sugar of which, as would appear from other considerations also, is not so susceptible of metamorphosis as the healthy variety) the sugar does not disappear to a similar extent in the clot.

Under the changes of the decomposition of blood, normal animal glucose is very readily metamorphosed. The rapidity of the metamorphosis depends on the activity of the decomposition of the animal substances present, and when the destruction of the sugar is complete, the blood has assumed an *acid reaction*.

This acid reaction of decomposing blood is only observable in that which was previously pretty largely impregnated with sugar. It appears to be owing to the formation of lactic acid. Certainly it cannot be due to carbonic acid, for the reaction remains after exposure to a boiling temperature.

The disappearance of sugar in the manner just pointed out does not depend on the oxygen of the air, except in so far as this agent is concerned in exciting the decomposition of the azotized constituents of the blood; for the sugar disappears as rapidly when there is a small as when there is a large amount of surface exposed to the air. But if the air be carefully and completely excluded, no signs of decomposition of the animal parts of the blood are to be observed, and under these circumstances the sugar also remains. The disappearance of

sugar is more rapid where the fibrin and corpuscles are present, than when the serum is exposed alone; and in accordance with this, the blood in the one case undergoes decomposition much sooner than in the other—a fact easily intelligible from the greater amount of azotized ingredients present.

If blood normally impregnated with saccharine matter be placed aside until signs of incipient decomposition are observed, and the sugar is beginning to disappear, exposure to a current of oxygen rapidly completes the total disappearance of the saccharine constituent. In this observation we have a further illustration of the analogy that appears to exist in the nature of the metamorphosis of sugar as a physiological process, and that which takes place chemically under the influence of an azotized compound, whose elementary particles are in a state of molecular transition. During life, the higher organic constituents of the blood are capable of undergoing the changes of assimilation on exposure to contact with oxygen, and there is a considerable destruction of sugar effected; for a short period after death these azotized constituents remain stationary and uninfluenced by oxygen, and with this, there is a corresponding suspension of the transformation of sugar; but, finally, the animal matter of the blood, on contact with oxygen, especially during a warm temperature, assumes a state of decomposition, the molecular changes of which again excite the destruction or metamorphosis of saccharine matter.

The sugar *disappears far less rapidly* from diabetic blood under the influence of exposure to the atmosphere than from healthy right-ventricular blood. From these, and a few other observations which he has as yet been able to make on the blood in Diabetes Mellitus, the author, were he to hazard an opinion on the nature of that obscure disease, would be disposed to say that there appears to be a modification of sugar produced by the liver, which is not susceptible of undergoing the normal process of destruction in the animal system, and which, therefore, accumulating in the blood, is eliminated by the kidneys. The experiments of Bernard have shown that vegetable glucose (grape-sugar) is not susceptible of destruction in the processes of animal life, unless converted into animal glucose by the agency of the liver. Diabetic sugar would therefore seem to bear a resemblance in its physiological relations to vegetable, rather than to animal glucose.

On the non-existence of Sugar in the Urine of the Fetus. By Dr. WILLIAM D. MOORE.
("Dublin Quarterly Journal of Medicine," August, 1855.)

In some experiments, the particulars of which we subjoin, Dr. Moore was unable to detect the presence of sugar in foetal urine. He allows the insufficiency of the evidence, but the evidence, so far as it goes, is certainly at variance with the statements of Bernard and others. Arguing from these experiments, indeed, foetal urine would appear to be an albuminous fluid of feeble reaction, *free from sugar*, containing some of the usual salts of the urine, abounding in a highly nitrogenized principle, probably allantoin, but affording no urea, and depositing a most remarkably large amount of nucleated basement epithelium.

The urine for these experiments was procured in this manner. The urachus and urethra having been tied, the bladder was removed entire from the body, and having been carefully washed, was opened by a small incision made in the most dependent part, the contents as they escaped being received in a clean vessel.

"On the 30th of May, 1855," writes Dr. Moore, "I received from Dr. M'Clinck a foetal bladder containing about two drachms of clear urine; the reaction of the latter was slightly alkaline; when boiled the fluid deposited earthy phosphates, and was evidently albuminous, continuing opaque after the deposited phosphate was re-dissolved by the addition of dilute acid; the urine, when boiled with liquor potassæ, gave no evidence of containing sugar, nor did any reaction, indicative of the presence of the latter, take place when the urine was highly concentrated previously to the experiment. When freed from albumen, highly concentrated, and treated with nitric acid, it exhibited no sign of the presence of urea.

"On the following day I received a specimen of foetal urine, which I found

to be very faintly acid; boiled and treated with dilute nitric acid, it yielded flakes of coagulated albumen; it exhibited no trace of either sugar or urea. The deposit was, on microscopic examination, seen to contain a large quantity of epithelium; no blood corpuscles could be detected.

"I now determined to examine any specimen I might subsequently procure by means of the modification of the copper test proposed by Dr. Kletzensky, the extreme delicacy of which I had ascertained by direct experiment. I therefore prepared some of the fluid recommended by him according to the form given by Dr. Dahl, in his 'Communications from the Chemico-Pathological Laboratory in Vienna,' which I had a short time before translated and published under the title of 'Heller's Pathological Chemistry of the Urine.' The test fluid is prepared by triturating together four parts of a saturated solution of sulphate of copper, six of glycerin, and eight of fused potash. Sulphate of potash crystallizes, and is separated by filtration; the filtered fluid is of a syrupy consistence, and of a beautiful deep blue color. On boiling a few drops of it, with a solution of one part of honey, in one thousand parts of water, the copper is quickly reduced, and a similar reaction would evidently take place in a solution even still more dilute.

"I also satisfied myself of the delicacy and accuracy of this test in the following manner: Having boiled some drops of it for a few minutes with portion of urine known to be free from sugar, without any change having taken place, I stirred the mixture with a glass rod merely moistened with diabetic urine of the specific gravity 1.034, on which the characteristic changes were instantly produced.

"On the 18th of June, I received a small portion of fetal urine, having a very faintly acid reaction, and containing a minute proportion of albumen. Boiled with potassa fusa, it gave no indication of the presence of sugar, nor did any characteristic change take place on the application of Kletzensky's test.

"The next specimen, which I received on the 16th of July, was tested solely by Kletzensky's process. It was free from sugar, was slightly acid, and highly albuminous. Under the microscope it exhibited an enormous quantity of nucleated pavement epithelium. Some of the most beautiful specimens of this form of epithelium I have ever seen were deposited from fetal urine. Some blood and mucus corpuscles, and a few oil globules, were also visible. The quantity of albumen present, which on ebullition separated in large flakes, was much too great to be derived solely from the small amount of blood contained in the urine. The urine, when freed from albumen, highly concentrated and treated with nitric acid, afforded no evidence of the presence of urea; but when examined after the mode proposed by Dr. E. W. Davy, namely, by admixture with hypochlorite of soda, half a cubic inch of nitrogen gas was obtained from two scruples by measure of the urine; this is in the proportion of six cubic inches from the fluid ounce, which, if the nitrogen were derived solely from urea, would represent 3.873 grains of the latter principle. Had such an amount of urea, however, existed, I could not have failed in my attempt to form crystals of the nitrate from the specimen; and although Dr. Prout obtained a considerable quantity of uric acid crystals from a portion of fetal urine, and Dr. L. Lehmann observed urates in that examined by him, the proportion of nitrogen above mentioned is far too great to have been derived from this source; it is, I think, much more likely that it proceeds from the decomposition of a peculiar nitrogenous principle, probably allantoin, present in the urine of the fetus. Analogy would favor this view. Urea, which is more abundant in the urine of cattle than in that of man, has not as yet been discovered in the fluid of the allantois. 'The secretion of the non-respiring fetus of the cow is,' observes Liebig, 'in a certain sense identical with the products secreted by the kidneys of the breathing animals. Urea represents carbonate of ammonia, from which the elements of two atoms of water have separated; allantoin represents oxalate of ammonia, from which the elements of three atoms of water have separated.' Should the correctness of the supposition I have advanced be confirmed by further experiment, it would, moreover, explain the discrepancy between the results obtained by Dr. Prout and Mr. Brande, for as the composition of three atoms of allantoin is equivalent to that of one atom of uric acid, with one atom of urea and one of

water, it is easy to conceive that crystals of uric acid might, under certain circumstances, spontaneously separate, while in another case the elements of the allantoin might retain their primitive arrangement.

"Allantoin is sparingly soluble in alcohol; I therefore think it probable that the appearances which led Dr. Prout to state that the alcoholic solution of fœtal urine 'gave, at first, faint and somewhat doubtful traces of urea,' which, 'on standing several days, became very distinct,' may have been due to the presence, not of urea, but of allantoin; indeed, immediately before, he states that alcohol 'was found to take up a principle strongly acid, and which readily assumed an imperfect crystallized form. I cannot venture,' he adds, 'to give this principle a name; it somewhat resembled the acid called amniotic, or rather allantoid, in some of its properties, but differed from it in others. Or it is possible that urea may have gradually separated from the alcoholic solution of allantoin, if such it was.'

"I have already stated, that the amount of nitrogen I obtained by Dr. Davy's very ingenious method would represent 3·873 grains of urea in the fluid ounce; now, as 79 parts of allantoin and 60 of urea contain an equal quantity (28 parts) of nitrogen, it follows that the six cubic inches of nitrogen would represent 5·099 grains of allantoin, as the amount of that principle contained in one fluid ounce of the fœtal urine under examination, for, $60 : 3·873 :: 79 : 5·099$."

On the transformation of the Cysticercus into Tania Solium. By Dr. KUCHENMEISTER.
(*"Weiner Med. Wochenschrift,"* No. I, 1855.)

Dr. Küchenmeister has recently had an opportunity of proving experimentally upon man, that different varieties of cysticerci are converted into the *tania solium*. The subject of the experiment was a condemned criminal. The cysticerci were obtained from the bodies of pigs, hares, &c., and given at intervals varying from five days to twelve hours before the hour of execution. An examination was made forty-eight hours after death, when four small *tæniæ* were found in the duodenum, and six others, less perfectly developed, in the water with which the intestines had been washed. Seventy-five cysticerci had been administered, and therefore the rest had perished.

V.

REPORT ON MATERIA MEDICA AND THERAPEUTICS.

On the advantages of administering some medicines by placing them upon the tongue.
By Mr. WARDROP. ("Lancet," May 12th, 1852?)

THERE are many circumstances which might be mentioned, in order to show the influence which some medicinal substances have on the animal economy when they are placed upon the surface of the tongue, these effects being caused by the absorption of the medicine, and its subsequent admixture with the mass of blood. Such phenomena are quite analogous to the effects produced by mercury or arsenic, whether these pass into the blood by the pulmonary, by the cutaneous, or by the absorbents of the alimentary canal. A gentleman, subject to what are usually called bilious headaches, had, during many years, seldom failed to obtain relief by taking sometimes two, and sometimes only one grain of calomel. He repeatedly found that there was a distinct difference in the length of time which the calomel took to relieve the headache, according as it was taken in the form of a powder put upon the tongue, or of a pill taken into the stomach. Another gentleman, who had for many years suffered from dyspepsia, and who, for some years before Mr. Wardrop saw him, was in the habit of regulating his bowels by taking a pill composed of a couple of grains of aloes with myrrh, accidentally discovered that there was a remarkable difference in the effect of the pill when swallowed or when allowed to dissolve in the mouth. When taken into the stomach, it always created a good deal of pain in the whole course of the alimentary canal, and the evacuations were irregular both in number and in quantity; but when the pill was dissolved in the mouth, no other sensible effect was ever produced than one natural evacuation. Further experience convinced the author of the difference in the efficacy of medicines placed upon the tongue, or taken into the stomach, and led him to inquire into the cause, and endeavor to explain so important a phenomenon. The structure of the tongue pointed out that it possesses an abundant supply of absorbents. "The spirituous parts," observes the illustrious Haller, "more especially of vegetables, are received either into the papillæ themselves, or into the absorbing villi of the tongue; as appears from the speedy renovation of strength by liquors of this kind even when they are not taken into the stomach." This structure satisfactorily explains how medicinal bodies, when placed upon the tongue, are absorbed and carried directly by the absorbent vessels of that organ into the venous circulation; whereas, when the same substances are taken into the stomach they are necessarily mixed with the food and juices contained in the alimentary canal, so that a more lengthened period must be required to separate them, and convey them by the absorbents into the thoracic duct, and thence into the venous system. Or they may pass unchanged, as has often been observed, out of the stomach, and in this unaltered state they are evacuated along with the excretions from the alimentary canal. This remarkable effect of medicines when placed upon the tongue, is strikingly illustrated in the administration of calomel; and it will be found that placing a very small quantity of it, say the sixth or even the twelfth part of a grain at short intervals, upon the tongue, such as every half hour, the mineral is rapidly absorbed, and ptyalism more quickly produced than by any other mode of employing the

calomel. These results of medicines are well known by the effects which croton-oil produces when applied to the tongue; and it is by no means improbable that the good effects of some medicines, when used in the form of lozenges, may be attributed to their absorption by the vessels of the tongue. All the circumstances regarding the difference and the effects of medicinal bodies, when conveyed to the venous system directly by the vessels of the tongue, or when they reach the blood by the more uncertain and circuitous course by the absorbents of the alimentary canal, appear to be worthy of being noticed, and may, it is not too much to hope, lead to some practical improvement in the mode of administering remedies. How far such differences will be found to result from exhibiting chloroform, the hydrocyanic acid, and the sulphates of quinine, iron, copper, and zinc, in the form of lozenges, and the advantages of using these medicines in such a manner, well merits further inquiry.

On the internal use of Belladonna in poisoning by Opium. By Dr. THOMAS ANDERSON. ("Edinburgh Medical and Surgical Journal," and "Indian Annals," April, 1855.)

Dr. Anderson, it appears, was induced to make the important observations related in this paper by the statements of the late Dr. Graves respecting the beneficial action of belladonna in continued fever with contracted pupil and coma. Acting upon these statements, he gave belladonna to several patients suffering under these symptoms, and with very favorable results. This was at Edinburgh, in the winter of 1853. The idea then occurred to him that the same treatment might perhaps be beneficial in the coma with contracted pupils, caused by poisoning with opium; and he determined to test it by experiment as soon as a case of opium-poisoning should occur.

"This," he says, "I was soon enabled to do, as a patient, of whom I had charge, and laboring under delirium tremens, having received an over-dose of the solution of the muriate of morphia, became comatose. He had taken, in thirty-six hours, two ounces of the solution of the muriate of morphia, and it had been continued by the attendant after sleep was procured. When I saw him he was in profound coma, his breathing was stertorous, amounting to no more than four or five per minute, and his pupils were contracted to mere points. His pulse was excessively weak, and rather slow; it was quite impossible to rouse him. I ordered him immediately the following mixture: Tincture of belladonna, six drachms, in five and a half ounces of water, of which an ounce was to be given every half hour. Three ounces of the mixture were administered with great caution, after which his pupils began to dilate. The six drachms of the tincture of belladonna were taken, and in four and a half hours after the first dose of it was given, the patient was in the following condition: The coma was entirely gone, respirations were between twenty-two and twenty-five per minute, the pupils were much dilated, the pulse had risen to nearly one hundred and twenty in the minute, and was also increased in strength. His countenance, also, from being cold and pallid, had become much flushed, and the whole body was much warmer.

"He replied readily and coherently to all my questions.

"He continued to improve for three days after, when rising suddenly to stool, he fainted, and before the assistance of the nurse could be procured, he was dead.

"A fortnight afterwards, I had another opportunity of testing my views. A woman, about fifty years of age, took, at 4 o'clock p. m., two drachms of laudanum, and at half past 5 p. m., three drachms more. She was brought to the infirmary at 8 o'clock p. m. After making vain attempts to rouse her from the coma, by walking her about, &c., the stomach-pump was used at a quarter past 8 o'clock. By this means her stomach was thoroughly evacuated, but no trace of opium was detected by smell or sight. It had probably been all absorbed. A current of electricity was then applied to her hands for nearly ten minutes, but without rousing her. I saw her at a quarter to 9 p. m. for the first time, and on being told that she had been poisoned by laudanum, I determined to try the effects of belladonna.

"At that time her pupils were contracted to mere points, her respiration was

stertorous, ten per minute, the pulse was feeble, and the extremities rather cold. Between nine and half past nine, I gave her one ounce of tincture of belladonna in three ounces of water, which was all swallowed, but with difficulty. In the course of the next half hour, two drachms more were administered. At 11 p.m. the first alteration in the size of the pupil was observed; the respirations had also then increased to twelve or thirteen in the minute, and the pulse was much stronger. The symptoms continued to improve till 2 a.m., when all indications of opium poisoning had disappeared. The woman was then sitting up in bed talking to the nurses, with pupils dilated to a little more than their natural size, and still slightly sensible to light. The extremities were quite warm, the pulse was about 100, and of good strength.

"She gave me a coherent account of her motives for taking the poison, of the amount of money she had spent in purchasing the laudanum, and the names of the druggists where it had been procured. She also replied sensibly to questions about her family, and the age and occupations of her children. She continued awake till nearly 4 o'clock a.m., after which she slept till 9 a.m. In the morning I found her pretty well, her pupils being no more dilated than they were four hours after the first administration of the belladonna. She complained, however, of nausea, but unaccompanied with vomiting. This symptom, along with the dilated pupils, had entirely disappeared in the course of two days. She was kept in the hospital, under observation, for ten days after the accident, at the end of which time she was dismissed, perfectly well. The tincture of belladonna used in both these cases was of the strength of four ounces of the leaves to two pints of rectified spirit, and prepared by percolation. Half a drachm is considered a full dose. I have seen dilatation of the pupil produced by a drachm given at once.

"So much, at present, for the action of belladonna on persons under the influence of opium. I will now very briefly notice some observations on the simultaneous administration of opium and belladonna, or its congener, hyoscyamus.

"My attention was accidentally directed to this subject some weeks ago, from a circumstance that happened to one of my patients. A man laboring under phthisis, and unable to rest at night from the violence of his cough, had the following mixture prescribed for him, as a soporific draught:

Sol. Mor. Mur., one drachm.
Tinct. Hyoscyami, two drachms.
Aqua Cassia, three ounces.

He took half of this draught at 11 p.m., but without obtaining any sleep, and before the morning the whole of it was given, but still with no effect. For two nights more, the same dose was repeated, but with no better result than at first. At last, I determined to try the effect of morphia alone; and accordingly I ordered a draught of thirty-five drops of the solution of the muriate of morphia, diluted with cassia water. After this he slept soundly, and therefore the same amount of morphia was continued for several nights with the same result—sound sleep.

"I mentioned this case to several of my friends, and two or three of them remembered similar cases which they had met with; but the sleeplessness following the simultaneous use of the medicines had been ascribed to some peculiarity in the constitution of the patient, and not to the opposite actions of the drugs upon the nervous system.

"In the 'Association Medical Journal' of the last week of November, 1853. I saw the following interesting case bearing on this subject; it is an abstract from the 'American Journal of Medical Science':—"A child, nine years old, swallowed two suppositories, each containing two grains of opium and two grains of extract of belladonna. It went to sleep not long after. The mother awoke it at the end of four hours with great difficulty, when very free vomiting ensued, producing great exhaustion. The drugs were taken at noon, and at 7 p.m. the child seemed only a little fatigued and sleepy. It had eaten dinner immediately before swallowing the poison; and Dr. Coale (who relates the case) suggests that this may have retarded absorption."

"Notwithstanding the very interesting, and, to me, almost conclusive nature of these experiments, I am not prepared, nor do I wish to say that I have dis-

covered an antidote for poisoning by opium. In such case, however, I believe that belladonna or hyoscyamus will be serviceable, on this supposition, that, if we give an agent whose action on the brain is opposite to that of opium, as soon as its minor physiological effects are developed, the evidences of the action of opium will disappear. It seems to me that these properties exist most markedly among the members of the natural family *Atropaceæ*. (See a paper on the *Solanaceæ*, by Mr. J. Miers, in the 'Annals of Natural History' for March, 1849. Also an abstract of a paper, by myself, on the *Solanaceæ*, in the 'Annals' for June, 1853, and the 'Phytologist' for May, 1853.)

"Many plants of this order, such as species of *atropa*, *hyoscyamus*, and *datura*, act as exalts of the nervous system, increasing the rapidity of the respiration, and the strength and frequency of the pulse, causing delirium of various grades of violence, accompanied, till death, with dilated pupil, and terminating in coma, probably merely the result of exhaustion of the powers of the system. Now, these are effects quite the opposite of those observed daily as the consequences of the administration of opium. That drug exerts its poisonous influence as a depressant of the vital powers, diminishing the number of respirations, weakening the heart's action, and causing coma, as one of the first alarming evidences of its effects.

"When talking lately to Dr. Garrod of my views of the treatment of poisoning by opium by belladonna, he told me, that in his opening lecture, delivered last October, in the University College, London, he had stated the converse of my idea,—viz., from the resemblance of the poisonous action of belladonna to delirium tremens, in which disease opium is a most approved remedy, it is probable that, in poisoning by belladonna, opium may be found advantageous.

"In conclusion, I will offer a few practical hints to any who may be inclined to test my views experimentally. That, taking the pupil as the index of the state of the brain, it is desirable to produce slight dilatation as speedily as possible.

"Now, in order to overcome the opposite effects of the opium, it is necessary to give doses three or four times greater than what would produce dilatation in a healthy adult. The first two cases that I have cited prove that no one need fear that their patients will thus be doubly poisoned. The tincture made from the leaves is the most uniform preparation. Four or six drachms of it might be given at first, and if that amount does not succeed in dilating the pupils in the course of an hour, the dose may be repeated. The careful application of a plaster of equal parts of the extract and lard to a blistered surface might be useful. Lastly, the internal use of small doses of atrophine—as, for example, one fourth or even one half of a grain in solution—will rapidly remove the contraction of the pupils."

On the use of Glycerine as an internal remedy. By Dr. CRAWCOUR, of New Orleans. ("New Orleans Medical News," and "New York Journal of Medicine," March, 1855.)

"I wish to draw attention," writes Dr. Crawcour, "to the *special* action of glycerine on the economy, and the perfect safety with which it can be used as an internal remedy. For the past twelve months I have used it in every case of disease where formerly I should have used cod-liver oil, and with superior benefit; for while it seems to possess all the remedial virtues of this latter agent, it is its superior in taste, in not disordering the digestion, and in its property of combining with any other remedy.

"In several cases of phthisis, of scrofulous disease generally, in mesenteric disease in children, I have used it largely and successfully; and in children, its sweet and agreeable taste gives it a great advantage over cod-liver oil, the only agent I can compare with it in its therapeutic action. In addition to its special antistrumous property, I find that it materially aids in the assimilation of salts of iron, especially of the iodide, and I now rarely order either iodine, or the iodide of iron, without combining them with glycerine. Quinine also is soluble in it, without the aid of sulphuric acid, and to some slight extent is divested of its bitterness.

"The dose in which I usually administer it is from one to three drachms three

times daily, in an ounce of water; in from one to two drachms, it, in a short period, relieves the cough, improves the digestive powers, and appears to increase the fat-producing principle in phthisical patients; in larger doses it has in a few instances produced nausea: it is, however, essentially necessary to its successful employment that it be obtained pure, and this is a matter of some difficulty, for it is ordinarily the result of the preparation of the common lead plaster, and consequently contains traces of lead."

On the use of Cod-liver-oil Oleine. By Dr. LEARED. ("Medical Times and Gazette," July 21, 1855.)

Dr. Leared advocates the use of the oleine of cod-liver oil, instead of the simple oil, upon two grounds: First, that the oleine is the medicinal part of the oil; and, secondly, that it is far less likely to disagree with the stomach of the patient. Dr. Leared holds peculiar views respecting the digestion and assimilation of oils and fat, and those views have led to the therapeutical employment of the oleine. He holds that the operation of the pancreatic fluid is to resolve the oils or fats into their constituent principles,—stearine, margarine, oleine; that the oleine is alone available for nutritive purposes, and that the rest are simply excrementitious. Dr. Leared says, moreover, that his experience goes to support this theory; that the separated oleine is, to say the least, quite as efficacious as the oil; and that it was taken readily by persons who could not take the oil.

Cod-liver oil yields about 75 per cent. of oleine, and the oleine may be obtained by submitting the oil to a low temperature, and separating it by pressure from the semi-solid mass.

On the physiological action of Chloride of Ammonium. By Dr. ALEXANDER LINDSAY. ("Glasgow Medical Journal," Oct. 1855.)

Wishful to ascertain the influence of medicinal doses of chloride of ammonium upon the healthy organism, Dr. Lindsay and two of his pupils agreed to make an experiment upon themselves.

"Daily, for a week previous to the experiment, the state of the appetite, the nature and amount of the food, the condition of the bowels, the frequency of the pulse, with the amount and density of the urinary secretion, were carefully noted. The medicine was then taken for a week, and similar observations recorded. The amount taken was in one case 18 grains per day, a second 13½ grains, and the third 9 grains. These quantities were divided into three equal doses, and were swallowed dissolved in two ounces of water. No comparison of the results was made till the observations were concluded. The following is a brief summary of these, from the notes now before me:

"On the second day after beginning the medicine, a buoyancy of the system was experienced that rendered ordinary pursuits a pleasure, and fitted body and mind for increased exertion. The uniformity of this result was the more remarkable as the experimenters represent types of the nervous, sanguineous, and lymphatic temperaments respectively. The feeling was least developed in the last. He employed the smallest dose. In all, the appetite was much improved. Where the smallest quantity of the salt was taken, the amount of food was doubled. The feculent discharges were in all much augmented. The mucous follicles of the intestinal tube seemed to be stimulated to a much increased secretion. In two, the force and frequency of the heart's action were diminished. The rate of the pulse in the gentleman employing the smallest dose was accelerated. In all, the chloride increased the urinary secretion. It cannot, however, be classed as a renal hydragogue. The increase of fluid ranged from six to twelve ounces in the twenty-four hours. In the two cases, where the largest and smallest doses were used, it acted as a renal depurant, the excess of solids varying from 70 to 160 grains daily. In the other, no change in this respect was noticed; but it may be necessary to remark, that the effect on the bowels appeared to be greatest in the individual making use of the medium dose."

On Albumen as a Cholagogue. By Dr. R. GIESELER, of Göttingen.
 ("Dublin Quarterly Journal," August, 1855.)

"Bernard's experiments, showing that this substance is assimilable only through the intervention of the hepatic function, immediately suggested to me the idea, that in albumen we might find an adequate excitant of the liver. I inferred, first, that fatty nutriment, and in a higher degree albuminous articles of diet, must be avoided in inflammation of the liver; and secondly, that in torpid conditions of that organ we might possess in albumen a remedy capable of stimulating it to increased activity. If to the liver be assigned the task of rendering albumen adapted to assimilation, this substance must be a stimulant of it, which will, *mutatis mutandis*, set its function to work, in the same manner as the administration of saline medicines does that of the kidneys. It is scarcely necessary to add, that the establishment of these results by experience must secure to albumen not merely the character of an adequate stimulant, but also pre-eminence over all other so-called cholagogues, since the action of the latter is very uncertain.

"I think it unnecessary to demonstrate the remarkable efficacy of albumen in this respect by the recital of cases, since it was, as I soon learned, already known to our predecessors. It, however, appears to me not unimportant to point out the source whence it would appear the recommendation to employ albumen as a remedy in jaundice was originally derived. Charles White, in his work on 'The Treatment of Pregnant and Puerperal Women,' states, that he once suffered for several weeks from jaundice, and was very much reduced. Soap, aloes, iron, and rhubarb, had been taken without the least benefit. A naval officer, happening to visit him, assured him he would cure him in a short time. He told him, in fact, that while on a voyage some time before, he was attacked with the same disease, and had in vain used the remedies prescribed by the surgeon of the vessel. A Spanish physician of the island of Minorca then advised him to take every morning, while fasting, two raw eggs, both yolk and white, in a glass of water, and to repeat the dose with one egg every four hours during the day. He followed this advice, and in three days his motions were again colored with bile. White tried the plan suggested, and found the effect attributed to the albumen to be confirmed; in three days the faces were colored, which they had not been for six weeks before. He continued the use of the eggs for some months. He subsequently recommended the remedy to several patients, and always with good effect, except in cases in which the jaundice proceeded from the presence of gall-stones. So far for the testimony of Mr. White. In the more modern treatises on therapeutics I have not been able to find any allusion to this application of albumen; the present communication cannot, therefore, be considered superfluous. A few of the older works recommend, not white of egg, but the yolk, probably on account of its yellow color. It is indeed possible that the action of the liver may be excited, not by the vitellin of the yolk, but merely by the albumen of the egg, with which Bernard experimented, and which White recommended in jaundice. Should this supposition prove correct, it would explain why the remedy lapsed into oblivion, and would furnish an important proof in our day for the often misunderstood truth, that practical results do not become the property of science or art, until they are referred to correct principles."

On Asparagus as a Diuretic. By Dr. JEAFFRESON, of Leamington. ("Assoc. Med. Journ.," 11th May, 1855.)

Dr. Jeaffreson states in this paper that for sixteen or seventeen years he has found tincture of asparagus to be a very valuable diuretic. The tincture is made in this way.

Take of dried tops of asparagus, five ounces; proof spirit, two pints. Take of fresh tops of asparagus five pounds. Bruise and press out the juice; evaporate at a low temperature till reduced to one pint, and strain. Lastly, add a pint of rectified spirit.

"The peculiar odor communicated by this substance to the urine, in a remarkably short time, is perhaps as familiar to the laity as the profession. It was this fact that first led me to think that asparagus might constitute a valuable adjunct to our list of diuretics; if not indeed by virtue of any specific diuretic quality it possessed, at least by its power of directing other agents of acknowledged diuretic power to the kidneys.

"On referring to such authorities as fell in my way, I found that, whilst some mentioned asparagus as a diuretic in general terms, without any specific reference to its medicinal administration, others omitted entirely to notice this plant, and some others denied its diuretic properties entirely. It appeared to me evident that any deductions drawn on this subject had been founded entirely on its effects as an article of food, and not upon any direct experiments of its medicinal administration. The fallacy and uselessness of such deductions is sufficiently apparent; upon generalizations so vague, we might have discarded numerous of our best remedies as deleterious, innocuous, or useless.

"Suffice it to say that, after some sixteen years' experience, I have found the tincture of asparagus a useful adjunct to our diuretic remedies. In many cases I have found it possessing direct diuretic properties when taken alone in water; but, in still more instances, I have found it most useful in promoting the diuretic properties of other drugs, as I conceive, by directing them at once to the kidneys. I have repeatedly in my own practice, as also in consultation, simply added from half a drachm to two drachms of tincture of asparagus to each dose of an unsuccessful diuretic, and found that copious diuresis was the result.

"The exact loss by weight in drying the plant is eleven parts out of twelve; in other words, that twelve parts by weight of the fresh shoots are only equal to one part of dried. I have not tried the infusion of the dry shoots, but should think them worthy of trial.

"The tincture of asparagus presents the advantage of being capable of combination, so far as I know by experience, with every diuretic substance in use, be it from the animal, the vegetable, or the mineral kingdom."

On the Saoria and Tatzé as new Tænisfuge. By Mr. HEPP. ("Bull. Gén. de Thérap." 15th and 30th of July, 1830; and "Medico-Chirurgical Review," July, 1855.)

The *Saoria* (*sauarja*) is the ripe and dried fruit of the *maesa* (*bacobotrys*) *piela* (Hachstetter). According to M. Schimper, it is found throughout Abyssinia, at the height of 7000 to 9000 feet, never below 6000 feet. The fruit is an ovoid drupe, covered over two-thirds of its extent by the calyx, and of a greenish-yellow color. The seeds are turbinate, angular, flattened at the apex, and covered by a resinous substance in ellipsoid grains. The long diameter of the fruit is from three to four millimetres, the short diameter a little less; it is then about the size of pepper. The taste is at first somewhat aromatic, oily, and astringent, and leaves for some time afterwards a tolerably persistent acid sensation in the pharynx. M. Schimper states that the dried fruit is administered in powder, in doses of 32 to 44 grammes; that it purges, and kills, and expels the worm entire, without affecting the health of the patient.

With a view to determine its action upon Europeans, Mr. Hepp collected observations upon its use from different medical men, and in the paper under analysis thirteen such observations are recorded. In two of these, however, no worm was suspected to be present; and in three, although suspected, no portion of it had been seen. In the remaining eight cases the parasite was expelled; but, as is commonly the case after other tænisfuges, the head of the worm was not found. In Abyssinia, according to M. Schimper, the *saoria* passes for a tænicide, and one of the observations recorded appears corroborative of the fact. The other effects produced in the cases related were the following:—nausea, five times; vomiting, once; colic, five times, violent in one case; three to five alvine evacuations; and in three cases, general feeling of illness, with peculiar sensations explicable otherwise than by reference to the *saoria* were observed; and in several cases, with the exception of the purging, the symptoms referred to were

wanting. The medicine exercises a special action upon the urine, imparting to it a violet color.

The following is given as the mode of administration :—A moderate regimen the previous day; in the morning, fasting, thirty grammes of the powder of saoria suspended in a liquid. Should nausea occur, it may be allayed by some mild aromatic. Ordinarily, in two or three hours liquid stools will occur, in which the *tænia* will be found dead. Should the bowels fail to act, castor oil may be administered in the course of the day. A mild regimen during the day; and on the morrow, if the stools have been scanty, some further evacuations may be obtained, with a view to drive out the remains of the worm not expelled the previous day. If the head of the worm is wanting, there is no objection to repeating the dose in four to eight days' time.

The following are the conclusions drawn :—

1. The saoria is more sure than our indigenous *tæniifuges*, though we cannot yet call its action constant. It would appear to be *tænicide*.
2. Its action is mild, seldom accompanied by disagreeable effects; and it is not difficult to swallow.
3. It may be fearlessly and readily administered to young children and to females, as well as to persons with a shattered constitution and weak digestive canal.
4. These different properties bespeak its superiority over our indigenous *tæniifuges*.
5. It is preferable to kousso, on account of its milder and yet *tænicide* operation, and from the lower price at which it may probably be obtained, since it is much more extensively distributed than the kousso. Its more ready and longer preservation is equally an advantage over both this and the fern-root.
6. Time alone can pronounce whether its operation is radical or only palliative.

The *tatzé* is the fruit of the *Myrsina africana*, a native of Abyssinia, the Cape of Good Hope, the Azores, and Algeria. It is a more disagreeable remedy than the saoria; and in six cases in which it was administered, the patients did not complain of any colicky symptoms being induced, and its purgative operation is not constant. It imparts an inky tinge to the urine. It is said to be *tænicide*. It succeeded in expelling the *tænia* in each of the six cases in which it was given, and in one of these, several other active vermifuges had failed. The medium dose of the powder of *tatzé* is fifteen grammes, followed, if necessary, by a dose of castor oil.

On the substitution of Zinc for Lead in Diachylon Plaster. By M. de Mussr. ("Bull. Gén. de Thérap." 1854; and "Medico-Chirurgical Review," July, 1855.

During a stay at the thermal springs of the Pyrénées, Dr. De Mussy was struck with the fact that where the baths were used by persons employing diachylon plaster, all those parts of the skin which had been in contact with it became covered with a thick layer of sulphuret of lead, which was very difficult of removal, and he was led to inquire how far it was prudent to maintain these saturnine compounds for a long time in contact with large absorbing ulcerated surfaces. He refers to an instance in which, on two different occasions, lead colic was induced by such an application. At the suggestion of this physician, M. Boileau endeavored to form a plaster with a base of zinc instead of lead. A solution of white soap was brought in contact with a solution of sulphate of zinc, an abundant precipitate of oleo-margarate of zinc fell, which, being washed and dried, was combined with the various other substances which enter into the formation of diachylum; augmenting, however, the proportion of oil and wax in order to preserve a proper consistence to the plaster.

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